DRAFT ENVIRONMENTAL IMPACT REPORT

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District

Volume I – DEIR

PLANNING DEPARTMENT
CASE NOs. **2015-000940ENV, 2017-008051ENV, 2016-014802ENV**

STATE CLEARINGHOUSE NO. 2018052060

	Draft EIR Publication Date:	July 24, 2019
	Draft EIR Public Hearing Date:	August 29, 2019
	Draft EIR Public Comment Period:	July 25, 2019 – September 9, 2019

SAN FRANCISCO
PLANNING
DEPARTMENT

Written comments should be sent to:
Elizabeth White, Senior Environmental Planner | 1650 Mission Street, Suite 400 | San Francisco, CA 94103 | CPC.HubPlanEIR@sfgov.org

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

DATE: July 24, 2019

TO: Distribution List for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District Draft EIR

FROM: Lisa Gibson, Environmental Review Officer

SUBJECT: Request for the Draft Environmental Impact Report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (Planning Department Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV)

This is the Draft of the Environmental Impact Report (EIR) for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District. A public hearing will be held on the adequacy and accuracy of this document. After the public hearing, our office will prepare and publish a document titled "Responses to Comments," which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments. It may also specify changes to this Draft EIR. Those who testify at the hearing on the Draft EIR will automatically receive a copy of the Responses to Comments document, along with notice of the date reserved for certification; others may receive a copy of the Responses to Comments and notice by request or by visiting our office. This Draft EIR together with the Responses to Comments document will be considered by the Planning Commission in an advertised public meeting and will be certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Responses to Comments document and print both documents in a single publication called the Final EIR. The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one document, rather than two. Therefore, if you receive a copy of the Responses to Comments document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Responses to Comments have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR [in Adobe Acrobat format on a CD] to private individuals only if they request them. Therefore, if you would like a copy of the Final EIR, please fill out and mail the postcard provided inside the back cover to the Environmental Planning division of the Planning Department within two weeks after certification of the EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final EIR.

Thank you for your interest in this project.

DRAFT ENVIRONMENTAL IMPACT REPORT

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District

PLANNING DEPARTMENT
CASE NOs. **2015-000940ENV, 2017-008051ENV, 2016-014802ENV**

STATE CLEARINGHOUSE NO. 2018052060

Draft EIR Publication Date:	**July 24, 2019**
Draft EIR Public Hearing Date:	**August 29, 2019**
Draft EIR Public Comment Period:	**July 25, 2019 – September 9, 2019**

SAN FRANCISCO
PLANNING
DEPARTMENT

Written comments should be sent to:
Elizabeth White, Senior Environmental Planner | 1650 Mission Street, Suite 400 | San Francisco, CA 94103 | CPC.HubPlanEIR@sfgov.org

TABLE OF CONTENTS

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District

VOLUME I

VOLUME II

Volume II is composed of the Appendix A and B, and a CD containing the rest of the Appendices.

Appendices

List of Figures **Page**

List of Tables **Page**

This Page Intentionally Left Blank

SUMMARY

INTRODUCTION

This environmental impact report (EIR) chapter provides a brief summary of the findings of the EIR regarding the proposed Hub Plan,[1] 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), and their potential environmental consequences. The chapter includes a summary of the project description; the environmental analysis, including environmental impacts and mitigation measures identified in this EIR; alternatives to the Hub Plan, two individual development projects, the Hub HSD, and their comparative environmental effects; and areas of controversy and issues to be resolved.

This summary should not be relied upon for a thorough understanding of the Hub Plan, the two individual development projects, the Hub HSD, their environmental impacts, or mitigation measures. Please refer to Chapter 1, Introduction, for a more complete description of the type of environmental analysis contained in this EIR; Chapter 2, Project Description, for a more complete description of the Hub Plan, two individual development projects, and the Hub HSD; Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, for a more complete description of associated impacts and mitigation measures, and Chapter 5, Alternatives, for a more complete description of identified alternatives to the Hub Plan, two individual development projects, and the Hub HSD and the comparative impacts.

PROJECT SYNOPSIS

The project sponsor for the Hub Plan and the Hub HSD, the San Francisco Planning Department (department), proposes to develop the Hub Plan, which would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan for the easternmost portions of the Market and Octavia Area Plan. The Hub Plan would encourage housing and safer and more walkable streets, as well as welcoming and active public spaces and increased transportation options by changing current zoning controls applicable to the area and implementing public realm improvements. In addition, the department proposes the designation of all or portions of the Hub Plan area as an HSD to allow the City of San Francisco (City) to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements. The project sponsor for the 30 Van Ness Avenue Project, 30 Van Ness Development, LLC, proposes partial retention of the existing office/retail building and construction of a 45-story building with ground-floor retail space, up to 11 floors of office space, and 33 floors of residential space. The project sponsor for the 98 Franklin Street Project, a partnership between Related California and

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

the International High School (grades 9–12 of the French American International School [FAIS]), proposes demolition of an existing 100-space surface parking lot and construction of a 31-story residential tower above a five-story podium that would be occupied by new facilities for the International High School (grades 9–12 of the FAIS). In addition, the 98 Franklin Street Project proposes improvements to Lily Street between Gough and Franklin streets, including a midblock crossing on Lily Street between Franklin and Gough streets (to connect FAIS properties at 150 Oak Street, one block west of 98 Franklin Street), as well as improvements on the western portion of Oak Street between Van Ness Avenue and Franklin Street.

The Hub Plan would change current zoning controls in the Hub Plan area to meet plan objectives. This would include changes to height and bulk districts for select parcels to allow more housing, including more affordable housing. Modifications to land use zoning controls would also allow more flexibility for development of nonresidential uses, specifically office, institutional, art, and public uses. In addition, requirements for micro retail[2] would encourage a mix of retail sizes and uses and decrease off-street vehicular parking capacity within the Hub Plan area, a transit-rich location, by reducing the currently permitted off-street vehicular parking maximums. The Hub Plan also calls for public-realm improvements to streets and alleys within and adjacent to the Hub Plan area, such as sidewalk widening, streetlight upgrades, median realignment, road and vehicular parking reconfiguration, tree planting, the elimination of one segment of travel on Duboce Avenue, and the addition of bulb-outs.

The Hub Plan seeks to increase the space available for housing through changes to the planning code and zoning map to allow the development of a taller, larger, denser, and more diverse array of buildings and heights on select parcels within the Hub Plan area. The proposed zoning under the Hub Plan would allow for additional height at the two major intersections at Market Street and Van Ness Avenue and Mission Street and South Van Ness Avenue, with towers ranging from 250 to 650 feet. This proposed zoning would allow increases in heights for 18 sites. If all of these sites were to be developed to the proposed maximum height limit, the changes would result in approximately 8,100 new residential units (approximately 15,700 new residents). This estimate also assumes a 15 percent increase in the number of units to account for potential density bonuses allowed by either state or local regulations.

The Hub Plan area, which is irregular in shape and approximately 84 acres, is spread across various city neighborhoods, such as the Downtown/Civic Center, South of Market (SoMa), Western Addition, and Mission neighborhoods. The Hub Plan area is entirely within the boundaries of the Market and Octavia Area Plan. In addition to the streets in the Hub Plan area, adjacent streets such as Lily Street between Gough Street and Franklin Street, Minna Street between 10th Street and Lafayette Street, and Duboce Avenue between Valencia Street and Mission Street are included in the project.

2 A micro retail unit is defined as retail space of 1,000 square feet or less.

PROGRAMMATIC AND PROJECT-SPECIFIC ANALYSIS

This EIR contains both analysis at a "program-level" pursuant to California Environmental Quality Act (CEQA) Guidelines section 15168 for adoption and implementation of the Hub Plan and "project-level" environmental review for the streetscape and street network improvements and the two individual development projects. A program EIR is appropriate for a project that will involve a series of actions that are (1) related geographically, (2) logical parts in a chain of contemplated actions, (3) connected as part of a continuing program, and (4) carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines section 15168).

The EIR's evaluation of the Hub Plan, excluding the streetscape and street network improvements, is programmatic. Its assessment of potential environmental impacts is based on the various Hub Plan components that are required for its implementation and would facilitate its goals and objectives. CEQA Guidelines section 15168 notes that the use of a programmatic EIR "ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis; avoids duplicative reconsideration of basic policy considerations; allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time, when the agency has greater flexibility to deal with basic problems or cumulative impacts; and allows for a reduction in paperwork."

With respect to the proposed streetscape and street network improvements and two individual development projects described in Chapter 2, Project Description, these components are analyzed in this EIR at the project level due to the sufficiency of detailed information available.

Lastly, this Draft EIR evaluates designation of portions or all of the Hub Plan area as an HSD, in accordance with Assembly Bill 73 (Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11). Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects that meet certain requirements within the HSD. Designation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards as well as all existing City laws and regulations but would not require additional CEQA analysis.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

This EIR analyzes the potential environmental effects of the Hub Plan, including the streetscape and street network improvements, the two individual development projects, and the Hub HSD. The department published a Notice of Preparation (NOP) on May 23, 2018, announcing its intent to prepare and distribute an EIR (Appendix A). The NOP requested that agencies and interested parties comment on environmental issues that should be addressed in the EIR. A scoping meeting was held on June 12, 2018, to explain the environmental review process and provide an opportunity to take public comments and concerns related to the potential environmental impacts of the Hub Plan, the two individual development projects, and the Hub HSD. The department considered the public comments received at the scoping meeting and prepared an initial study in order to focus the scope of the EIR by assessing which environmental topics would not result in significant impacts on the environment. The initial study is provided as part of this EIR, in Appendix B.

The initial study found that the Hub Plan, the two individual development projects, and the Hub HSD would have potentially significant impacts in the areas of cultural resources, transportation and circulation, noise, air quality, wind, and shadow. Accordingly, these topics are evaluated in this EIR. The initial study also found that impacts on the remaining environmental topics that are required to be examined under the CEQA Guidelines and chapter 31 of the San Francisco Administrative Code would be less than significant, less than significant with mitigation measures, or would have no impact, and, therefore, need not be considered in the EIR.

This summary provides an overview of the analysis contained in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures. Impacts are categorized by type of impact, as follows:

- **No Impact**. No adverse changes (or impacts) to the environment are expected.
- **Less than Significant**. An impact that would not involve an adverse physical change to the environment, would not exceed the defined significance criteria, or would be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations.
- **Less than Significant with Mitigation**. An impact that would be reduced to a less-than-significant level though implementation of the identified mitigation measure.
- **Significant and Unavoidable with Mitigation**. An adverse physical environmental impact that would exceed the defined significance criteria but could be reduced through compliance with existing local, state, and federal laws and regulations and/or implementation of feasible mitigation measures. The impact cannot be reduced to a less-than-significant level.
- **Significant and Unavoidable**. An adverse physical environmental impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations. There are no feasible mitigation measures.

SIGNIFICANT AND UNAVOIDABLE IMPACTS

All impacts of the Hub Plan and the two individual development projects, its alternatives, and the associated mitigation measures identified in this EIR are summarized in **Table S-1**, p. S-12. The impacts are listed in the same order as they appear in the text of Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this EIR. The Hub Plan and the two individual development projects would result in the following significant and unavoidable impacts (including impacts that are significant and unavoidable with mitigation):

CULTURAL RESOURCES

- The Hub Plan could cause a substantial adverse change in the significance of individual built environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code. (Impact CUL-1)
- The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built environment resources. (Impact C-CUL-1)

TRANSPORTATION IMPACTS

- During construction, the Hub Plan would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit. (Impact TR-1)
- The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off-street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people walking, or people biking. (Impact TR-8)
- The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts. (Impact C-TR-1)
- The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative loading impacts. (Impact C-TR-7)

NOISE IMPACTS

- During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards. (Impact NOI-1)

- Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards. (Impact C-NOI-1)

Air Quality Impacts

- During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-5)
- The Hub Plan would result in emissions of fine particulate matter (particulate matter 2.5 microns in diameter or less [$PM_{2.5}$]) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. (Impact AQ-7)
- The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions. (Impact C-AQ-1)

Wind Impacts

- The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts. (Impact C-WI-1)

Shadow Impacts

- The Hub Plan would create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. (Impact SH-1)
- Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts. (Impact C-SH-1)

Areas of Known Controversy and Issues to Be Resolved

As noted above, the department published an NOP on May 23, 2018, to notify the public of its intent to prepare and distribute an EIR for the Hub Plan, two individual development projects, and Hub HSD. During the public scoping process and at the public scoping meeting (held on June 12, 2018), the department received comments from public agencies, organizations, and individuals regarding the scope and content of the EIR, including comments on the design of the proposed project and its environmental effects.

Comments received during the scoping process on the Hub Plan, the two individual development projects, and the Hub HSD and its environmental effects are addressed in this EIR. This section lists the areas of controversy and major concerns raised during the scoping period as well as issues to be resolved, along with the location in the EIR where these issues are discussed. These include the following:

- Requests for the type of planning document to be specified (Chapter 2, Project Description).
- Concern about affordable housing to be provided under the Hub Plan (Chapter 2, Project Description).
- Requests for thorough analysis on the cumulative social impact of potential housing and office developments (Chapter 4, Other CEQA Considerations).
- Requests for discussion of steps to mitigate impacts on lower-income Tenderloin and SoMa community (Chapter 4, Other CEQA Considerations).
- Requests to analyze the project with a 1 vehicle mile traveled per capita threshold of significance (Section 3.B, Transportation).
- Requests for consideration of ride-hailing services impacts on loading and possible mitigation (Section 3.B, Transportation).
- Concern about parking and requests for zero private parking for all new developments in the neighborhood (Section 3.B, Transportation).
- Concern about mass transit impacts in the area (Section 3.B, Transportation).
- Requests for a community process where affected community members can give feedback on safer and walkable streets (Section 3.B, Transportation).
- Requests to include analysis of wind impacts on people walking and people biking (Section 3.E, Wind).
- Requests for additional alternatives with different parking ratios and traffic routes (Section 3.B, Transportation).

SUMMARY OF ALTERNATIVES

In addition to the Hub Plan, the two individual development projects, and the Hub HSD, this Draft EIR analyzes the environmental impacts of seven alternatives that were determined to represent a reasonable range of alternatives, as follows:

- **Hub Plan and Hub HSD No Project Alternative (Alternative A):** Alternative A considered in this EIR preserves the existing zoning and height and bulk controls in the Market and Octavia Area Plan and assumes no adoption of the Hub Plan or Hub HSD. No streetscape or street network improvements would occur, and the Hub Plan area would not be designated an HSD. However, Alternative A considers individual development projects in general with the assumption that build-out of the 18 sites within the proposed Hub Plan boundaries, including the two sites at 30 Van Ness Avenue and 98 Franklin Street, would occur by 2040 and be developed according to current land use controls for zoning, height, and bulk specifications as specified in the Market and Octavia Area Plan. The total number of new residential units developed under Alternative A would be approximately 5,300 units.

- **Land Use Plan Only Alternative (Alternative B):** Alternative B assumes that the same policies and planning code and general plan amendments would be implemented as with the Hub Plan and Hub HSD, except that this alternative would exclude implementation of the Hub Plan's proposed streetscape and street network improvements in the Hub Plan vicinity. This alternative assumes the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street would occur, as under the proposed project. As such, development assumptions for this alternative would be the same as those for the Hub Plan and Hub HSD, including the addition in the Hub Plan area of approximately 8,100 residential units, which includes the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street. Alternative B includes upzoning of the 18 sites, rezoning parcels from Neighborhood Commercial Transit (NCT) to Downtown General Commercial (C-3-G) zoning district, and extending the Van Ness and Market Downtown Residential Special Use District, as would occur with the proposed project. There would be no change to development intensity as compared to the proposed project.
- **Hub Plan Reduced Intensity Alternative (Alternative C)**: Alternative C would modify the assumptions of what would occur at the 18 sites identified under the Hub Plan for height and bulk increases. Specifically, under Alternative C, the height increase and rezoning proposed at 99 South Van Ness Avenue, which contains a historical or potentially historical resources, would not occur, and this site would be removed from the project entirely. At 170 Otis Street, upzoning would still occur, but it would meet the Secretary of the Interior's standards. At 10 South Van Ness Avenue, the Full Preservation Alternative identified in the 10 South Van Ness Avenue EIR would be selected, under which the existing building at 10 South Van Ness Avenue, a historical resource, would undergo some changes but it would retain all of its exterior and interior character-defining features. In addition, upzoning would be reduced by 20 feet at 1 South Van Ness Avenue, 10 South Van Ness Avenue, 1500–1540 Market Street, 30 Van Ness Avenue, and 33 Gough Street.
- **30 Van Ness Avenue No Project Alternative (Alternative D)**: Under Alternative D, the proposed individual development project at 30 Van Ness Avenue would be removed from the project and would not be built as proposed in this EIR and the existing conditions at 30 Van Ness Avenue would not change. The existing 75-foot office and retail building would remain, along with the existing ingress and egress points. As such, the proposed housing units, commercial square footage, parking, and streetscape improvements at 30 Van Ness Avenue would not be implemented.

- **30 Van Ness Avenue Reduced Intensity Alternative (Alternative E)**: Alternative E includes partial retention of the existing office/retail building and construction of an approximately 11-story building with ground-floor retail space and 10 floors of office space, reaching a height of approximately 150 feet. In total, the existing structure would be altered and expanded from its current envelope of approximately 184,100 square feet to a total of up to approximately 365,000 square feet, including up to 15,000 square feet of retail and 350,000 square feet of general office. Alternative E does not include residential uses or a tower portion. In addition, Alternative E would include one below-grade garage level for vehicle and bicycle parking rather than two below-grade garage levels as included under the project.
- **98 Franklin Street No Project Alternative (Alternative F)**: Under Alternative F, the proposed building at 98 Franklin Street would not be built. Existing conditions, which include an approximately 100-space surface parking lot, would be retained. No residential, school, or retail uses would be constructed, and no changes to curbside parking or loading would occur.
- **98 Franklin Street Reduced Intensity Alternative (Alternative G)**: Alternative G proposes to build a 162,358-square-foot, 120-foot (10-story) building that includes 54,505 square feet of residential uses, 81,000 square feet of school uses, 23,753 square feet of parking uses, and 3,100 square feet of retail uses. Under this alternative, the FAIS would be located within five levels in the podium, and 47 residential units would be constructed in a five-story tower. The residential units would include 10 studios, 24 one-bedroom units, eight two-bedroom units, and five three-bedroom units. This alternative would also include 41 below-ground parking spaces, three car share spaces, 191 bicycle parking spaces, three loading spaces, and nine permanent employees.

Section 21002 of the CEQA Guidelines requires lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. CEQA also requires that an environmentally superior alternative be identified among the alternatives analyzed. In general, the environmentally superior alternative is the project that avoids or substantially lessens some or all of the significant and unavoidable impacts of the proposed project (CEQA Guidelines section 15126.6). **Table S-3**, p. S-75, compares the significant impacts of the Hub Plan and the two individual development projects to each alternative. The table compares the significance of impacts in two ways. One, for each impact studied, it identifies the level of impact for the project and each alternative (e.g., no impact, less-than-significant impact, less-than-significant impact with mitigation, significant and unavoidable impact, or significant and unavoidable impact with mitigation). Two, for each alternative, it indicates whether the degree of impact would be equal to, less than, or greater than that of the project impact. In some cases, although both the project and alternative would result in the same level of impact, the degree of impact with the alternative might be less than or greater than that of the project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Pursuant to CEQA Guidelines section 15126.6(e)(2), an EIR is required to identify the environmentally superior alternative (i.e., the alternative that has the fewest significant environmental impacts) from among the other alternatives evaluated. The Hub Plan and the two individual development projects would result in significant and unavoidable impacts related to cultural resources, transportation and circulation, noise, air quality, and shadow. On the basis of comparing the extent to which the alternatives reduce or avoid the significant impacts of the Hub Plan and the two individual development projects, Alternatives A, D, and F would be the environmentally superior alternatives because they would result in either fewer impacts or no impacts on resources. However, if Alternatives A, D, and F are the environmentally superior alternatives, then the EIR must also specify which of the other alternatives (including the proposed project) would be environmentally superior.

Among the alternatives to the Hub Plan, Alternative B would offer a lower level of impact by avoiding all of the project-specific impacts associated with the streetscape and street network improvements, specifically impacts on built environment and historic resources and construction-related impacts. However, development intensity in the Hub Plan area would remain the same as the Hub Plan. Alternative C would provide a greater reduction in impacts on built environment and historic resources and shadow by reducing development intensity in the Hub Plan area while retaining the streetscape and street network improvements. Alternative C would also meet more of the project objectives as compared to Alternative B. Therefore, among the Hub Plan alternatives, Alternative C is the environmentally superior alternative.

When examining the project-specific alternatives to the 30 Van Ness Avenue Project, Alternative E would be considered the environmentally superior alternative because it would reduce impacts on built environment and historic resources and shadow impacts when compared to the project while still meeting most of the project's objectives.

Similarly, among the 98 Franklin Street Project and its alternatives, Alternative G would be considered the environmentally superior alternative because it would also reduce impacts on built environment and historic resources and shadow impacts when compared to the project while still meeting most of the project's objectives.

SUMMARY TABLES

Table S-1, p. S-12, includes the impacts and mitigation measures identified in the EIR for the Hub Plan and the two individual development projects; **Table S-2**, p. S-58, includes the impacts and mitigation measures identified in the initial study for the Hub Plan and the two individual development projects; and **Table S-3**, p. S-75, includes a comparison of the significant impacts of the Hub Plan and the two individual development projects to the impacts of the alternatives. It also determines if the sponsor's objectives would be met by the Hub Plan and the two individual development projects and the alternatives.

The information in the tables is organized to correspond with environmental issues discussed in Chapter 3 of the EIR. **Table S-1**, p. S-12, and **Table S-2**, p. S-58, are arranged in four columns: (1) impacts, (2) level of significance prior to mitigation measures (if applicable), (3) mitigation and improvement measures (if applicable), and (4) level of significance after mitigation (if applicable). For a complete description of potential impacts and recommended mitigation measures, please refer to the topical sections in Chapter 3 of the EIR. This EIR also identifies improvement measures where applicable. Improvement measures are not required to reduce, avoid, or eliminate adverse physical changes. Instead, they are identified as ways to further reduce the magnitude of less-than-significant impacts. They may be adopted by decision-makers as conditions of project approval.

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Cultural Resources			
Impact CUL-1: The Hub Plan could cause a substantial adverse change in the significance of individual built environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code.	S	***M-CUL-1a: Avoid or Minimize Effects on Identified Built Environment Resources.*** This mitigation measure is required in recognition of Objective 3.2 of the Market and Octavia Area Plan, to which the Hub Plan is an amendment. Objective 3.2 states that the Market and Octavia Area Plan shall "[p]romote the preservation of notable historic landmarks, individual historic buildings, and features that help to provide continuity with the past." Policy 3.2.2 of the Market & Octavia Plan states that the plan shall "encourage rehabilitation and adaptive reuse of historic buildings and resources." In order to meet Objective 3.2 and Policy 3.2.2, the project sponsor of a subsequent development project in the Hub Plan area that occurs on the site of a built environment historic resource or contributor to a historic district shall seek feasible means for avoiding significant adverse effects on historic architectural resources, with judgment of the significance of the impact to be based on the Secretary of the Interior's Standards for Rehabilitation. If a project that conforms to the Secretary of the Interior's Standards for Rehabilitation is not feasible, the project sponsor shall a.) demonstrate that infeasibility to the San Francisco Planning Department's preservation staff, and b.) consult with the San Francisco Planning Department's preservation and urban design staff to determine if effects on built environment resources should be minimized by retaining a portion of the existing building and incorporating it into the project, with the understanding that such minimization would still result in a significant adverse impact on historical resources. If retention of a portion of the existing building is not feasible, the project sponsor shall demonstrate that infeasibility to the San Francisco Planning Department's preservation staff. California Environmental Quality Act Guidelines section 15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." For the purposes of this mitigation measure, economic factors will not be considered. The applicability of each factor would vary from project to project and be determined by staff members on a case-by-case basis. ***M-CUL-1b: Prepare and Submit Historical Documentation of Built Environment Resources.*** Where avoidance is not feasible, as described in Mitigation Measure M-CUL-1a, the project sponsor of a subsequent development project in the Hub Plan area shall undertake historical documentation. The project sponsor shall retain a professional who meets the Secretary of the Interior's Qualification Standards for Architectural Historian or Historian (36 Code of Federal Regulations part 61) and a photographer with demonstrated experience in Historic American Buildings Survey photography to prepare written and photographic documentation for the affected built environment resources. The Historic American Buildings Survey documentation package for each affected built environment resource shall be reviewed and approved by the San Francisco Planning	SUM

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		Department's preservation staff prior to the issuance of any demolition, site, or construction permit for the project. The documentation shall consist of the following: ● *Historic American Buildings Survey–level Photographs*: Historic American Buildings Survey standard large-format photography shall be used to document the built environment resources and surrounding context. The scope of the photographs shall be reviewed and approved by the San Francisco Planning Department's preservation staff for concurrence, and all photography shall be conducted according to the current National Park Service Historic American Buildings Survey standards. The photograph set shall include distant/elevated views to capture the extent and context of the resource. ○ All views shall be referenced on a key map of the resource, including a photograph number with an arrow to indicate the direction of the view. ○ The draft photograph contact sheets and key map shall be provided to the San Francisco Planning Department's preservation staff for review to determine the final number and views for inclusion in the final dataset. ○ Historic photographs identified in previous studies shall also be collected, scanned as high-resolution digital files, and reproduced in the dataset. ● *Written Historic American Buildings Survey Narrative Report:* A written historical narrative, using the outline format, shall be prepared in accordance with the Historic American Buildings Survey Historical Report Guidelines. ● *Measured Drawings:* A set of measured drawings shall be prepared to document the overall design and character-defining features of the affected built environment resource. Original design drawings of the resource, if available, shall be digitized and incorporated into the measured drawings set. The San Francisco Planning Department's preservation staff shall assist the consultant in determining the appropriate level of measured drawings. ● *Print-on-Demand Booklet:* Following preparation of the Historic American Buildings Survey photography, narrative report, and drawings, a print-on-demand softcover book shall be produced for the resource that compiles the documentation and historical photographs. The print-on-demand book shall be made available to the public for distribution. Format of Final Dataset: ● The project sponsor shall contact the History Room of the San Francisco Public Library, San Francisco Planning Department, Northwest Information Center, and California Historical Society to inquire as to whether the research repositories would like to receive a hard or digital copy of the final dataset. Labeled hard copies and/or digital copies of the final book, containing the photograph sets, narrative report, and measured drawings, shall be provided to these	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		repositories in their preferred format. • The project sponsor shall prepare documentation for review and approval by the San Francisco Planning Department's preservation staff, along with the final Historic American Buildings Survey dataset, that outlines the outreach, response, and actions taken with regard to the repositories listed above. The documentation shall also include any research conducted to identify additional interested groups and the results of that outreach. The project sponsor shall make digital copies of the final dataset, which shall be made available to additional interested organizations, if requested. ***M-CUL-1c: Develop and Implement an Interpretive Program for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.*** For projects that would demolish or materially alter a historical resource or contributor to a historic district, the project sponsor shall work with the San Francisco Planning Department's preservation staff or other qualified professionals to institute an interpretive program onsite that references the property's history and the contribution of the historical resource to the broader neighborhood or historic district. The interpretive program would include the creation of historical exhibits, incorporating a permanent display featuring historic photos of the affected resource and a description of its historical significance, in a publicly accessible location on the project site. This may also include a website. The contents of the interpretative program shall be determined by the San Francisco Planning Department's preservation staff. Development of the interpretive displays shall be overseen by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations part 61). An outline of the format and the location and content of the interpretive displays shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to issuance of a demolition permit or site permit. The format, location, content, specifications, and maintenance of the interpretive displays must be finalized prior to issuance of any building permits for the project. ***M-CUL-1d: Video Recordation for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.*** For projects that would demolish or materially alter a historical resource or contributor to a historic district, the project sponsor shall work with the San Francisco Planning Department's preservation staff or other qualified professionals to undertake video documentation of the affected historical resource and its setting. The documentation shall be conducted by a professional videographer, preferably one with experience recording architectural resources, prior to the commencement of any demolition or project activities at the project site. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate), as set forth by the Secretary of the Interior's Professional Qualification Standards	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		(36 Code of Federal Regulations part 61). The documentation shall include as much information as possible, using visuals in combination with narration, about the materials, construction methods, current condition, historic use, and significance and historic context of the historical resource. Digital copies of the video documentation shall be submitted to the San Francisco Planning Department; archival copies of the video documentation shall be submitted to repositories including, but not limited to, the San Francisco Public Library, Northwest Information Center, and California Historical Society. The video documentation shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to issuance of a demolition, site, or building permit for the project. ***M-CUL-1e: Architectural Salvage for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.*** For projects that would demolish or materially alter a historical resource or contributor to a historic district, the project sponsor shall seek feasible means for salvaging the building's character-defining architectural features and incorporating them into either the design of the new project proposed at the site or the interpretive program that would be developed under M-CUL-1c. The project sponsor shall work closely with the San Francisco Planning Department preservation and urban design staff to determine which elements should be salvaged. In the event that reuse of salvaged elements in either the design of a new building or in an interpretive program proves infeasible or otherwise undesirable as determined by the San Francisco Planning Department preservation staff, the project sponsor may, at the direction of the San Francisco Planning Department preservation staff, be required to attempt to donate the elements to an appropriate historical or arts organization. A detailed salvage plan shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to the issuance of any demolition, site, or construction permit for the project. ***M-CUL-1f: New Locations for Contributing Auxiliary Water Supply System Elements to Preserve Historic District Character.*** Where a streetscape or street network improvement proposed under the Hub Plan would require moving an Auxiliary Water Supply System hydrant, the San Francisco Planning Department shall conduct additional study to determine if it contributes to the historic significance of the Auxiliary Water Supply System. If the element is determined to be a contributing feature of the Auxiliary Water Supply System, the project sponsor shall work with the San Francisco Planning Department's preservation staff to determine a location where the contributing Auxiliary Water Supply System hydrant could be reinstalled to preserve the historic relationships and functionality that are character-defining features of the Auxiliary Water Supply System. Generally, hydrants shall be reinstalled near the corner or the intersection from where they were removed. Any hydrant found not to contribute to the significance of the Auxiliary Water	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		Supply System could be removed or relocated without diminishing the historic integrity of the district. Furthermore, the project would require the San Francisco Planning Department to coordinate with San Francisco Public Works and adopt San Francisco Public Works Auxiliary Water Supply System contract specifications related to the protection of existing water and Auxiliary Water Supply System facilities during implementation of streetscape and street network improvements under the Hub Plan.	
Impact CUL-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a substantial adverse change to individual built environment resources and/or historic districts, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code.	LTS	None required.	NA
Impact CUL-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of an individual built environment resource and/or historic district, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code, from ground-borne vibration caused by temporary construction activities.	S	See ***Impact NOI-4*** for applicable mitigation measures.	LTS
Impact CUL-4. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could cause a substantial adverse change in the significance of an archaeological resource, as defined in section 15064.5.	S	**The Hub Plan and Hub HSD** ***M-CUL-4a: Project-Specific Preliminary Archaeological Review for Projects Involving Soil Disturbance.*** This archaeological mitigation measure shall apply to any subsequent development project involving any soil-disturbing or soil-improving activities including excavation, utilities installation, grading, soils remediation, or compaction/chemical grouting 2 feet or greater below ground surface, for which no archaeological assessment report has been prepared. Projects to which this mitigation measure applies shall be subject to Preliminary Archaeological Review by the San Francisco Planning Department archaeologist.	LTS

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		Based on the Preliminary Archaeological Review, the Environmental Review Officer shall determine if there is a potential for effects on an archaeological resource, including human remains, and, if so, what further actions are warranted to reduce the potential effect of the project on archaeological resources to a less-than-significant level. Such actions may include project redesign to avoid the potential to affect an archaeological resource, or further investigations by an archaeological consultant, such as preparation of a project-specific Archaeological Research Design and Treatment Plan or the undertaking of an archaeological monitoring or testing program based on an archaeological monitoring or testing plan. The scope of the Archaeological Research Design and Treatment Plan, archaeological testing, or archaeological monitoring plan shall be determined in consultation with the Environmental Review Officer and consistent with the standards for archaeological documentation established by the Office of Historic Preservation for the purposes of compliance with the California Environmental Quality Act (Office of Historic Preservation, Preservation Planning Bulletin No. 5). Avoidance of effects on an archaeological resources is always the preferred option. ***M-CUL-4b: Procedures for Accidental Discovery of Archaeological Resources for Projects Involving Soil Disturbance.*** This mitigation measure is required for projects that would result in soil disturbance and are not subject to Mitigation Measure M-CUL-4a. Should any indication of an archeological resource, including human remains, be encountered during any soils-disturbing activity of the project, the project head foreman and/or project sponsor shall immediately notify the Environmental Review Officer and shall immediately suspend any soils-disturbing activities in the vicinity of the discovery until the Environmental Review Officer has determined what additional measures should be undertaken. If the Environmental Review Officer determines that an archeological resource may be present within the project site, the project sponsor shall retain the services of an archeological consultant from the pool of qualified archeological consultants maintained by the San Francisco Planning Department archeologist. The archeological consultant shall advise the Environmental Review Officer as to whether the discovery is an archeological resource, retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archeological resource is present, the archeological consultant shall identify and evaluate the archeological resource. The archeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the Environmental Review Officer may require, if warranted, specific additional measures to be implemented by the project sponsor. Measures might include preservation in situ of the archeological resource, an archeological monitoring program, an archeological testing program, or an archeological treatment program. If an archeological treatment program, archeological monitoring program or archeological testing program is required, it shall be consistent with the Planning Department's Environmental Planning division guidelines for such programs. The Environmental Review Officer may also require that	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		the project sponsor immediately implement a site security program if the archeological resource is at risk from vandalism, looting, or other damaging actions. If human remains are found all applicable state laws will be followed as outlined in Impact CUL-7 and an archeological treatment program would be implemented in consultation with appropriate descendant groups and approved by the Environmental Review Officer. The project archeological consultant shall submit a Final Archeological Resources Report to the Environmental Review Officer that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report. Copies of the Draft Final Archeological Resources Report shall be sent to the Environmental Review Officer for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center shall receive one copy and the Environmental Review Officer shall receive a copy of the transmittal of the Final Archeological Resources Report to the Northwest Information Center. The Environmental Planning Division of the San Francisco Planning Department shall receive one bound copy, one unbound copy, and one unlocked, searchable PDF copy on a CD of the Final Archeological Resources Report along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the Environmental Review Officer may require a different final report content, format, and distribution from that presented above. ***M-CUL-4c: Requirement for Archaeological Monitoring for Streetscape and Street Network Improvements.*** Based on the reasonable potential that archaeological resources may be present within the Hub Plan area in instances where streetscape and street network improvements are proposed that include soil disturbance of 2 feet or greater below street grade, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources and on human remains and associated or unassociated funerary objects. The project sponsor shall retain the services of an archaeological consultant from the rotational Department Qualified Archaeological Consultants List maintained by the San Francisco Planning Department archaeologist. After the first project approval action or as directed by the Environmental Review Officer, the project sponsor shall contact the San Francisco Planning Department archaeologist to obtain the names and contact information for the next three archaeological consultants on the Qualified Archaeological Consultants List. The archaeological consultant shall undertake an archaeological monitoring program. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the Environmental Review Officer for review and comment, and shall be considered draft reports subject to revision until final approval by the Environmental Review Officer. Archaeological monitoring and/or data recovery programs required by this measure could	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		suspend construction of the project for up to a maximum of four weeks. At the direction of the Environmental Review Officer, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level potential effects on a significant archaeological resource as defined in California Environmental Quality Act Guidelines sections 15064.5(a) and (c). *Consultation with Descendant Communities*: On discovery of an archaeological site[3] associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group, an appropriate representative[4] of the descendant group and the Environmental Review Officer shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archaeological field investigations of the site and to offer recommendations to the Environmental Review Officer regarding appropriate archaeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archaeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group. *Archaeological Monitoring Program*. The archaeological monitoring program shall minimally include the following provisions: ● The archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological monitoring program reasonably prior to commencement of any project-related soil-disturbing activities. The Environmental Review Officer in consultation with the project archaeologist shall determine which project activities shall be archaeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archaeological monitoring because of the potential risk these activities pose to archaeological resources and to their depositional context. ● The archaeological consultant shall undertake a worker training program for soil-disturbing workers that shall include an overview of expected resource(s), how to identify the evidence of the expected resource(s), and the appropriate protocol in the event of apparent discovery of an archaeological	

3 The term "archaeological site" is intended here to minimally include any archaeological deposit, feature, burial, or evidence of burial.

4 An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and, in the case of the Overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the San Francisco Planning Department archaeologist.

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		resource. ● The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archaeological consultant and the Environmental Review Officer until the Environmental Review Officer has, in consultation with the archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits. ● The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis. ● If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction crews and heavy equipment until the deposit is evaluated. In the case of pile driving or deep foundation activities (foundation, shoring, etc.), if the archaeological monitor has cause to believe that the pile driving or deep foundation activities may affect an archaeological resource, the pile driving or deep foundation activities shall be terminated until an appropriate evaluation of the resource has been made in consultation with the Environmental Review Officer. The archaeological consultant shall immediately notify the Environmental Review Officer of the encountered archaeological deposit. The archaeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, present the findings of this assessment to the Environmental Review Officer. If the Environmental Review Officer in consultation with the archaeological consultant determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either: ● The proposed project shall be redesigned to avoid any adverse effect on the significant archaeological resource; or ● An archaeological data recovery program shall be implemented, unless the Environmental Review Officer determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. If an archaeological data recovery program is required by the Environmental Review Officer, the archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan. The project archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological data recovery plan. The archaeological consultant shall prepare a draft archaeological data recovery plan that shall be submitted to the Environmental Review Officer for review and approval. The archaeological data recovery plan shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the archaeological data	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		recovery plan shall identify which scientific/historical research questions are applicable to the expected resource, which data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The scope of the archaeological data recovery plan shall include the following elements: • *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations. • *Cataloging and Laboratory Analysis*. Descriptions of selected cataloging system and artifact analysis procedures. • *Discard and Deaccession Policy*. Descriptions of and rationale for field and post-field discard and deaccession policies. • *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archaeological data recovery program. • *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities. • *Final Report*. Descriptions of proposed report format and distribution of results. • *Curation*. Descriptions of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. *Human Remains, Associated or Unassociated Funerary Objects*. The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws, including immediate notification of the Coroner of the City and County of San Francisco and, in the event of the coroner's determination that the human remains are Native American remains, notification of the California Native American Heritage Commission, who shall appoint a most likely descendant (Public Resources Code section 5097.98). The Environmental Review Officer shall also be immediately notified upon discovery of human remains. The archeological consultant, project sponsor, Environmental Review Officer, and Most Likely Descendent make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (California Environmental Quality Act Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code 5097.98 requirement that descendants make recommendations or preferences for treatment within 48	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		hours of being granted access to the site. The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the Environmental Review Officer to accept recommendations of a most likely descendant. The archaeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such an agreement has been made or, otherwise, as determined by the archaeological consultant and the Environmental Review Officer. If no agreement is reached, state regulations shall be followed including the reburial of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98). *Final Archaeological Resources Report*. The archaeological consultant shall submit a Draft Final Archaeological Resources Report to the Environmental Review Officer that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. The Draft Final Archaeological Resources Report shall include a curation and deaccession plan for all recovered cultural materials. The Draft Final Archaeological Resources Report shall also include an Interpretation Plan for public interpretation of all significant archaeological features. Copies of the Draft Final Archaeological Resources Report shall be sent to the Environmental Review Officer for review and approval. Once approved by the Environmental Review Officer, the consultant shall also prepare a public distribution version of the Final Archaeological Resources Report. Copies of the Final Archaeological Resources Report shall be distributed as follows: California Archaeological Site Survey Northwest Information Center shall receive one copy and the Environmental Review Officer shall receive a copy of the transmittal of the Final Archaeological Resources Report to the Northwest Information Center. The Environmental Planning division of the San Francisco Planning Department shall receive one bound and one unlocked, searchable portable document format copy on compact disc of the Final Archaeological Resources Report along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of public interest in or the high interpretive value of the resource, the Environmental Review Officer may require a different or additional final report content, format, and distribution than that presented above.	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		30 Van Ness Avenue and 98 Franklin Street Projects ***M-CUL-4d: Requirements for Archaeological Testing Consisting of Consultation with Descendent Communities, Testing, Monitoring, and a Report.*** Based on a reasonable presumption that archaeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources and on human remains and associated or unassociated funerary objects. The project sponsor shall retain the services of an archaeological consultant from the rotational Department Qualified Archaeological Consultants List maintained by the San Francisco Planning Department archaeologist. After the first project approval action or as directed by the Environmental Review Officer, the project sponsor shall contact the San Francisco Planning Department archaeologist to obtain the names and contact information for the next three archaeological consultants on the Qualified Archaeological Consultants List. The archaeological consultant shall undertake an archaeological testing program as specified herein. In addition, the consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the Environmental Review Officer for review and comment, and shall be considered draft reports subject to revision until final approval by the Environmental Review Officer. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the Environmental Review Officer, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level potential effects on a significant archaeological resource as defined in California Environmental Quality Act Guidelines sections 15064.5 (a) and (c). *Consultation with Descendant Communities:* On discovery of an archaeological site associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group, an appropriate representative of the descendant group and the Environmental Review Officer shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archaeological field investigations of the site and to offer recommendations to the Environmental Review Officer regarding appropriate archaeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archaeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group. *Archaeological Testing Program.* The archaeological consultant shall prepare and submit to the Environmental Review Officer for review and approval an archaeological testing plan. The archaeological testing program shall be conducted in accordance with the approved	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		archaeological testing plan. The archaeological testing plan shall identify the property types of the expected archaeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine to the extent possible the presence or absence of archaeological resources and to identify and evaluate whether any archaeological resource encountered on the site constitutes a historical resource under the California Environmental Quality Act. At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings to the Environmental Review Officer. If, based on the archaeological testing program, the archaeological consultant finds that significant archaeological resources may be present, the Environmental Review Officer in consultation with the archaeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archaeological testing, archaeological monitoring, and/or an archaeological data recovery program. No archaeological data recovery shall be undertaken without the prior approval of the Environmental Review Officer or the San Francisco Planning Department archaeologist. If the Environmental Review Officer determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either: • The proposed project shall be redesigned to avoid any adverse effect on the significant archaeological resource; or • A data recovery program shall be implemented, unless the Environmental Review Officer determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. *Archaeological Monitoring Program*. If the Environmental Review Officer in consultation with the archaeological consultant determines that an archaeological monitoring program shall be implemented, the archaeological monitoring program shall minimally include the following provisions: • The archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological monitoring program reasonably prior to commencement of any project-related soil-disturbing activities. The Environmental Review Officer in consultation with the archaeological consultant shall determine which project activities shall be archaeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context. • The archaeological consultant shall undertake a worker training program for soil-disturbing workers that shall include an overview of expected resource(s), how to identify the evidence of the expected	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		resource(s), and the appropriate protocol in the event of apparent discovery of an archaeological resource. • The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archaeological consultant and the Environmental Review Officer until the Environmental Review Officer has, in consultation with project archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits. • The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis. • If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction activities and equipment until the deposit is evaluated. In the case of pile driving or deep foundation activities (foundation, shoring, etc.), if the archaeological monitor has cause to believe that the pile driving or deep foundation activities may affect an archaeological resource, the pile driving or deep foundation activities shall be terminated until an appropriate evaluation of the resource has been made in consultation with the Environmental Review Officer. The archaeological consultant shall immediately notify the Environmental Review Officer of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, and present the findings of this assessment to the Environmental Review Officer. Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the Environmental Review Officer. *Archaeological Data Recovery Program*. The archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan. The archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological data recovery plan prior to preparation of a draft archaeological data recovery plan. The archaeological consultant shall submit a draft archaeological data recovery plan to the Environmental Review Officer. The archaeological data recovery plan shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the archaeological data recovery plan shall identify which scientific/historical research questions are applicable to the expected resource, which data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. The scope of the archaeological data recovery plan shall include the following elements: • *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations. • *Cataloguing and Laboratory Analysis*. Descriptions of selected cataloguing system and artifact analysis procedures. • *Discard and Deaccession Policy*. Descriptions of and rationale for field and post-field discard and deaccession policies. • *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archaeological data recovery program. • *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities. • *Final Report*. Descriptions of proposed report format and distribution of results. • *Curation*. Descriptions of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. *Human Remains, Associated or Unassociated Funerary Objects*. The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws, including immediate notification of the Office of the Chief Medical Examiner of the City and County of San Francisco and, in the event of the medical examiner's determination that the human remains are Native American remains, notification of the California Native American Heritage Commission, who shall appoint a most likely descendant (Public Resources Code section 5097.98). The Environmental Review Officer shall also be immediately notified upon discovery of human remains. The archeological consultant, project sponsor, Environmental Review Officer, and Most Likely Descendent make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (California Environmental Quality Act Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code 5097.98 requirement that descendants make recommendations or preferences for treatment within 48 hours of being granted access to the site. The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the Environmental Review Officer to accept recommendations of a most likely descendant. The archaeological consultant shall retain	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archaeological consultant and the Environmental Review Officer. If no agreement is reached, state regulations shall be followed including the reburial of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98). *Final Archaeological Resources Report*. The archaeological consultant shall submit a Draft Final Archaeological Resources Report to the Environmental Review Officer that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. The Draft Final Archaeological Resources Report shall include a curation and deaccession plan for all recovered cultural materials. The Draft Final Archaeological Resources Report shall also include an Interpretation Plan for public interpretation of all significant archaeological features. Copies of the Draft Final Archaeological Resources Report shall be sent to the Environmental Review Officer for review and approval. Once approved by the Environmental Review Officer, the consultant shall also prepare a public distribution version of the Final Archaeological Resources Report. Copies of the Final Archaeological Resources Report shall be distributed as follows: California Archaeological Site Survey Northwest Information Center shall receive one copy and the Environmental Review Officer shall receive a copy of the transmittal of the Final Archaeological Resources Report to the Northwest Information Center. The Environmental Planning division of the San Francisco Planning Department shall receive one bound and one unlocked, searchable portable document format copy on compact disc of the Final Archaeological Resources Report along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of public interest in or the high interpretive value of the resource, the Environmental Review Officer may require a different or additional final report content, format, and distribution than that presented above.	
Impact CUL-5. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could disturb human remains, including those interred outside of formal cemeteries.	S	Implement ***Mitigation Measures M-CUL-4a, Project-Specific Preliminary Archaeological Review for Projects Involving Soil Disturbance; M-CUL-4b, Procedures for Accidental Discovery of Archaeological Resources for Projects Involving Soil Disturbance; M-CUL-4c, Requirement for Archaeological Monitoring for Streetscape and Street Network Improvements; M-CUL-4d, Requirements for Archaeological Testing Consisting of Consultation with Descendent Communities, Testing, Monitoring, and a Report.***	LTS

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-CUL-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built environment resources.	S	Implement ***Mitigation Measures M-CUL-1a, Avoid or Minimize Effects on Identified Built Environment Resources; M-CUL-1b, Prepare and Submit Historical Documentation of Built Environment Resources; M-CUL-1c, Develop and Implement an Interpretive Program for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; M-CUL-1d, Video Recordation for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; M-CUL-1e, Architectural Salvage for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; M-CUL-1f, New Locations for Contributing Auxiliary Water Supply System Elements to Preserve Historic District Character.***	SUM
Impact C-CUL-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in demolition and/or alteration of built environment resources.	LTS	None required.	NA
Impact C-CUL-3. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, could result in a significant cumulative impact on archaeological resources and human remains.	S	Implementation ***Mitigation Measures M-CUL-4a, Project-Specific Preliminary Archaeological Review for Projects Involving Soil Disturbance; M-CUL-4b, Procedures for Accidental Discovery of Archaeological Resources for Projects Involving Soil Disturbance; M-CUL-4c, Requirement for Archaeological Monitoring for Streetscape and Street Network Improvements; M-CUL-4d, Requirements for Archaeological Testing Consisting of Consultation with Descendent Communities, Testing, Monitoring, and a Report.***	LTS
Transportation and Circulation			
Impact TR-1. The Hub Plan would require an extended duration for the construction period and intense construction activity, the secondary effects of which could create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public	S	***M-TR-1: Construction Management Plan.*** For projects within the Hub Plan area, the project sponsor shall develop and, upon review and consultation with the San Francisco Municipal Transportation Agency and San Francisco Public Works, implement a Construction Management Plan to address issues related to transportation-related circulation, access, staging, and hours of delivery. The Construction Management Plan would disseminate appropriate information to contractors and affected agencies regarding coordinating construction activities to minimize disruption and maintain circulation in the project area to the extent possible, with particular focus on ensuring connectivity for transit, people walking, and people bicycling. The Construction Management Plan would supplement and expand, rather than modify or	SUM

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
transit.		supersede, any manual, regulations, or provisions set forth by San Francisco Municipal Transportation Agency, San Francisco Public Works, other City departments and agencies, the California Department of Transportation. If it is determined during a subsequent project-level transportation study that construction of the proposed project would overlap with adjacent project(s) so as to result in transportation-related impacts, the project sponsor or its contractor(s) shall consult with City departments such as San Francisco Municipal Transportation Agency and San Francisco Public Works and conduct interdepartmental meetings, as deemed necessary by San Francisco Municipal Transportation Agency, San Francisco Public Works, and the department, to coordinate a Construction Management Plan with adjacent project(s) to minimize the severity of any disruption to adjacent land uses and transportation facilities by overlapping construction-related transportation impacts to the extent feasible and commercially reasonable in light of noise regulations, labor and contract requirements, available daylight hours, and critical-path construction schedules. Based on review of this plan, the project may be required to consult with San Francisco Municipal Transportation Agency Muni Operations prior to construction to review potential effects on nearby transit operations. The Construction Management Plan shall include a range of measures for the project sponsor, with San Francisco Municipal Transportation Agency concurrence, to select and prioritize to minimize disruption to the extent feasible so that overall circulation in the project area is maintained to the extent possible. Potential measures to be included in the Construction Management Plan shall include, but not be limited to, the following: • *Restricted Truck Access Hours* – Limit truck movements between the peak hours of 7 a.m. and 9 a.m. and between 4 p.m. and 7 p.m. to the extent feasible and commercially reasonable in light of noise regulations, labor and contract requirements, available daylight hours, and critical-path construction schedules, as well as other times, if required by San Francisco Municipal Transportation Agency, to minimize disruptions to vehicular traffic, including transit during the a.m. and p.m. peak periods. • *Construction Truck Routing Plans* – Identify optimal truck routes between regional facilities and the project site, taking into consideration truck routes of other development projects and any construction activities affecting the roadway network. • *Carpooling, Bicycle, Walking, and Transit Access for Construction Workers* – The construction contractor shall encourage carpooling, bicycling, or walking to the project site as well as transit options for construction workers. These methods could include providing transit subsidies to construction workers, providing secure bicycle parking spaces, participating in free-to-employee ride-matching programs from www.511.org, participating in the	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		emergency ride-home program through the City (www.sferh.org), or providing transit information to construction workers. • *Project Construction Updates for Adjacent Businesses and Residents* – To minimize construction impacts on access, the project sponsor shall provide nearby residences and adjacent businesses with regularly updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), and travel-lane closures. At regular intervals, to be defined in the Construction Management Plan and, if necessary, the Coordinated Construction Management Plan, a regular email notice shall be distributed by the project sponsor to adjacent neighbors, residents, and others, as requested, providing current construction information of interest to neighbors as well as contact information for those with specific construction inquiries or concerns.	
Impact TR-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not require an extended duration for the construction period or intense construction activity, the secondary effects of which could not create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit.	LTS	None required.	NA
Impact TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not cause substantial additional VMT or induced automobile travel.	LTS	None required.	NA
Impact TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create major driving hazards.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially delay local or regional transit or create potentially hazardous conditions for public transit providers.	LTS	None required.	NA
Impact TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people walking or otherwise interfere with accessibility for people walking to the project site or adjoining areas.	LTS	None required.	NA
Impact TR-7. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people bicycling or otherwise interfere with bicycle accessibility.	LTS	None required.	NA
Impact TR-8. The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off-street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people bicycling, or people walking.	S	There is no feasible mitigation available to reduce this impact.	SU

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact TR-9. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would accommodate commercial vehicle and passenger loading demand.	LTS	None required.	NA
Impact TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in a substantial vehicular parking deficit.	LTS	None required.	NA
Impact TR-11. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in inadequate emergency access.	LTS	None required.	NA
Impact C-TR-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts.	S	Implement ***Mitigation Measure M-TR-1: Construction Management Plan.***	SUM
Impact C-TR-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not cause substantial additional VMT or substantially induce automobile travel.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to traffic hazards.	LTS	None required.	NA
Impact C-TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative transit impacts.	LTS	None required.	NA
Impact C-TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts on people walking.	LTS	None required.	NA
Impact C-TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative bicycle impacts.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-TR-7. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative loading impacts.	S	There is no feasible mitigation available to reduce this impact.	SU
Impact C-TR-8. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not contribute considerably to significant cumulative loading impacts.	LTS	None required.	NA
Impact C-TR-9. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative vehicular parking impacts.	LTS	None required.	NA
Impact C-TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to emergency access.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Noise			
Impact NOI-1. During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards.	S	***M-NOI-1a: Construction Noise Control Plan for Projects Within 250 Feet of a Noise-Sensitive Land Use.*** The project sponsor for each subsequent development project under the Hub Plan located within 250 feet of a noise-sensitive land use (identified on Figure 3.C-1) or proposing or required to conduct nighttime construction shall develop a noise control plan to ensure that project noise from all construction activities (including construction, demolition, and excavation, etc.) is minimized to the maximum extent feasible with a goal of construction noise not exceeding 90 dBA and 10 dBA above the ambient noise level at noise sensitive receptors. The measures specified by the project sponsor for each individual project shall be reviewed and approved by the San Francisco Planning Department prior to the issuance of building permits. Measures that may be used to restrict noise include, but are not limited to, those listed below. • Locate construction equipment (including stationary noise sources like temporary generators) as far as feasible from adjacent or nearby noise-sensitive receptors. • Stationary noise sources (e.g., generators and compressors) located in close proximity to noise-sensitive land uses shall be muffled and enclosed within temporary enclosures and shielded by barriers (which can reduce construction noise by as much as 5 dB). • Electric motors rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used (which can reduce noise levels from exhaust by approximately 10 dB). External jackets on the tools themselves shall also be used (which could reduce noise approximately 5 dB). • Construction contractors shall be required to use “quiet” gasoline-powered compressors or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible. • Prohibit idling of inactive construction equipment for prolonged periods (i.e., more than two minutes). • Prohibit or limit gasoline or diesel engines from having unmuffled exhaust systems. • Ensure that equipment and trucks used for project construction use the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds). • Ensure that impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction are hydraulically or electrically powered, when possible. Quieter equipment shall be used instead of impact equipment, when feasible (such as drills rather than impact equipment). • Undertake the noisiest activities during times of least disturbance to surrounding residents and	SUM

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		occupants. • Limit nighttime construction to the extent feasible. If nighttime construction is determined to be necessary, a special permit shall be obtained from the Director of Public Works or the Director of Building Inspection. Nighttime construction activities shall comply with the requirements of the permit. In addition, the contractor shall employ the measures discussed above (e.g., limiting idling, locating equipment far from noise-sensitive receptors, using noise-reducing enclosures, etc.) or other feasible measures to reduce noise such that interior noise at nearby receptors is reduced to the extent practicable (below 45 A-weighted decibels, equivalent sound level, where feasible). • If required by the San Francisco Planning Department, based on the degree of construction, proximity of sensitive uses, or a noise complaint, project sponsor shall monitor the noise levels during periods of noisy construction activities (demolition, excavation, etc.). A plan for noise monitoring and reporting shall be provided to the San Francisco Planning Department for review prior to the commencement of construction. Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the San Francisco Planning Department a list of measures for responding to and tracking complaints pertaining to construction noise. These measures shall include onsite posting and a noise hotline, and may include: • A procedure and phone number for notifying the San Francisco Planning Department, the health department, or the police department of complaints (during regular construction hours and off hours). • A sign posted onsite describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction. • Designation of an onsite construction complaint and enforcement manager for the project. ***M-NOI-1b: Site-Specific Noise Control Measures for Projects Involving Pile Driving.*** For subsequent development projects under the Hub Plan that require pile driving, a set of site-specific noise attenuation measures shall be prepared under the supervision of a qualified acoustical consultant and reviewed and approved by the San Francisco Planning Department prior to the commencement of any pile driving activity. These attenuation measures shall be included in the construction of the project and include as many of the following control strategies, and any other effective strategies, as feasible to reduce noise from pile driving at nearby noise-sensitive land uses: • Require the construction contractor to erect temporary plywood or similar solid noise barriers along the boundaries of the project site to shield sensitive receptors and reduce noise levels; • Require the construction contractor to implement "quiet" pile-driving technology (such as pre-drilling of piles, sonic pile drivers, and the use of more than one pile driver to shorten the total	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		pile driving duration), where feasible, with consideration of geotechnical and structural requirements and soil conditions. • Require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurements, at a distance of 100 feet, at least once per day during pile-driving; and • Require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses.	
Impact NOI-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards.	S	Implement ***Mitigation Measure M-NOI-1a: Construction Noise Control Plan for Projects Within 250 Feet of a Noise-Sensitive Land Use***.	LTS
Impact NOI-3. Construction of the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would generate excessive ground-borne vibration or ground-borne noise levels.	S	***M-NOI-3a: Protect Adjacent Potentially Susceptible Structures from Construction-Generated Vibration.*** The project sponsor for each subsequent development project in the Hub Plan area shall consult with the San Francisco Planning Department's environmental planning and preservation staff (as applicable) to determine whether adjacent or nearby buildings constitute structures that could be adversely affected by construction-generated vibration. For purposes of this measure, nearby potentially susceptible buildings within 100 feet of a construction site for a subsequent development project shall be considered if pile driving would be required at that site; if no pile driving would occur, potentially susceptible buildings within 25 feet of vibration-generating construction activity, such as the use of excavators, drill rigs, bulldozers, and vibratory rollers, shall be considered. If buildings adjacent to construction activity are identified that could be adversely affected, the project sponsor shall incorporate into construction specifications for the proposed project a requirement that the construction contractor(s) use all feasible means to avoid damage to adjacent and nearby buildings. Such methods to help reduce vibration-related damage effects may include maintaining a safe distance between the construction site and the potentially affected building, to the extent possible, based on site constraints, or using construction techniques that reduce vibration, such as concrete saws instead of jackhammers or hoe-rams to open excavation trenches, non-vibratory rollers, or hand excavation to the extent feasible. For projects that would require piles, "quiet" pile-driving technologies (such as predrilling piles or using sonic pile drivers) shall be used, as feasible; appropriate excavation shoring methods shall be employed to prevent the movement of adjacent structures; and adequate security shall be ensured to minimize risks related to vandalism and fire. ***M-NOI-3b: Construction Monitoring Program for Structures Potentially Affected by Vibration.*** For	LTS

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		structures located close enough to experience vibration levels that could result in building damage, as determined by compliance with Mitigation Measure M-NOI-3a, the project sponsor shall undertake a monitoring program to minimize damage to adjacent buildings and ensure that any such damage is documented and repaired. The monitoring program, which shall apply within 100 feet of pile driving activities and within 25 feet of other vibration generating activities, shall be followed and include the following components: • Prior to the start of any ground-disturbing activity, the project sponsor shall engage a historic architect or qualified historic preservation professional to undertake a pre-construction survey of potentially affected historic buildings identified by the San Francisco Planning Department within 100 feet of planned pile driving activity or within 25 feet of other vibration generating activity to document and photograph the existing conditions of the building(s). If nearby affected buildings are not potentially historic, a structural engineer or other professional with similar qualifications shall document and photograph the existing conditions of potentially affected buildings within 100 feet of pile driving activity or within 25 feet of other vibration generating construction activity. • Based on the construction and condition of the resource(s), the consultant shall also establish a standard maximum vibration level that shall not be exceeded at any building, based on existing conditions, character-defining features, soil conditions, and anticipated construction practices (common standards are a peak particle velocity of 0.25 inch per second for historic and some old buildings, a peak particle velocity of 0.3 inch per second for older residential structures, and a peak particle velocity of 0.5 inch per second for new residential structures and modern industrial/commercial buildings, as shown in **Table 3.C-7**, p. 3.C-20). • To ensure that vibration levels do not exceed the established standard, the project sponsor shall monitor vibration levels at each structure and prohibit vibratory construction activities that generate vibration levels in excess of the standard. • Should vibration levels be observed in excess of the selected standard, construction shall be halted and alternative construction techniques put in practice, to the extent feasible (e.g., pre-drilled piles could be substituted for driven piles, if feasible, based on soil conditions, or smaller, lighter equipment could be used in some cases). • The historic preservation professional (for effects to historic buildings) and/or structural engineer (for effects to non-historic structures) shall conduct regular periodic (every three months) inspections of each building during ground-disturbing activity on the project site. Should damage to any building occur, the building(s) shall be remediated to their pre-construction condition at the conclusion of ground-disturbing activity on the site.	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact NOI-4. During operation, the Hub Plan would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards.	S	***M-NOI-4: Noise Analysis for Projects in Excess of Applicable Noise Standards.*** To reduce potential conflicts between existing sensitive receptors and new noise-generating uses developed under the Hub Plan, a noise analysis shall be required for new development that includes noise-generating activities or equipment (e.g., outdoor gathering areas; places of entertainment; heating, ventilation, and air-conditioning equipment) with the potential to generate noise levels substantially in excess of ambient noise levels or in excess of any applicable standards. This analysis shall include, at a minimum, a site survey to identify potential noise-sensitive uses within 900 feet of and with a direct line of sight to the subsequent development project site. It shall also include at least one 24-hour noise measurement (with maximum noise level readings that permit accurate description of maximum levels reached during nighttime hours). This analysis shall be conducted prior to the first project approval action. The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that the proposed use would not adversely affect nearby noise-sensitive uses, would not substantially increase ambient noise levels, and would not result in noise level in excess of any applicable standards. All recommendations from the acoustical analysis necessary to ensure that noise sources would meet applicable requirements of the noise ordinance and/or not result in substantial increases in ambient noise levels shall be incorporated into the building design and operations. Should such concerns be present, the San Francisco Planning Department may require the completion of a detailed noise control analysis (by a person qualified in acoustical analysis and/or engineering) that includes the incorporation of noise reduction measures (including quieter equipment, construction of barriers or enclosures, etc.) prior to the first project approval action.	LTS
Impact NOI-5. Operations of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-NOI-1. Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	S	Implement ***Mitigation Measures M-NOI-1a, Construction Noise Control Plan for Projects Within 250 Feet of a Noise-Sensitive Land Use, and M-NOI-1b, Site-Specific Noise Control Measures for Projects Involving Pile Driving.***	SUM
Impact C-NOI-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of excessive ground-borne vibration or ground-borne noise levels during construction.	LTS	None required.	NA
Impact C-NOI-3. Operation of the Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	S	Implement ***Mitigation Measure M-NOI-4, Noise Analysis for Projects in Excess of Applicable Noise Standards***.	LTS

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-NOI-4. Operation of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	LTS	None required.	NA
Air Quality			
Impact AQ-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	LTS	None required.	NA
Impact AQ-2. The Hub Plan would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	LTS	None required.	NA
Impact AQ-3. The construction and operation of streetscape and street network improvements proposed as part of the Hub Plan would not result in a cumulatively considerable net increase in criteria pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact AQ-4. During construction, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	S	***M-AQ-4a: Construction Emissions Analysis for Projects Above Screening Levels or That Exceed Criteria Air Pollutant Significance Thresholds.*** Subsequent development projects that do not meet the applicable screening levels in **Table 3.D-6,** p. 3.D-47, of this EIR or that the planning department otherwise determines could exceed one or more significance thresholds for criteria air pollutants shall undergo an analysis of the project's construction emissions. If no significance thresholds are exceeded as shown in Table 3.D-5, no further mitigation is required. If one or more significance thresholds are exceeded, Mitigation Measure M-AQ-4b shall be implemented. ***M-AQ-4b: Construction Emissions Minimization Plan for Projects Above Screening Levels or That Exceed Criteria Air Pollutant Significance Thresholds or as Required in Impact AQ-7.*** If required based on the analysis described in Mitigation Measure M-AQ-4a or as required in Impact AQ-7 the project sponsor shall submit a construction emissions minimization plan to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. 1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements: a) Where access to alternative sources of power is reasonably available, portable diesel engines shall be prohibited; b) All off-road equipment shall have: i. Engines that meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board Tier 2 off-road emission standards (or Tier 3 or Tier 4 off-road emissions standards if NO_X emissions exceed applicable thresholds), *and* ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS)5, and iii. Engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99). iv. Any other best available technology offered at the time that future projects are submitted to the planning department for review may be included in the Plan as substitutions for the above items i through iii.	LTS

5 Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore VDECS would not be required.

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		c) Exceptions: i. Exceptions to 1(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with 1(b) for onsite power generation. ii. Exceptions to 1(b)(ii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an air board Level 3 VDECS (1) is technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an air board Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to 1(b)(ii), the project sponsor shall comply with the requirements of 1(c)(iii). iii. If an exception is granted pursuant to 1(c)(ii), the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedule in **Table M-AQ-4B**. **Table M-AQ-4b. Off-Road Equipment Compliance Step-Down Schedule*** **Compliance Alternative** / **Engine Emission Standard** / **Emissions Control** 1 / Tier 2** / Air Board Level 2 VDECS 2 / Tier 2 / Air Board Level 1 VDECS * How to use the table. If the requirements of 1(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. ** Tier 3 off road emissions standards are required if NO_X emissions exceed applicable thresholds. iv. Exceptions to 1(b)(iii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a renewable diesel is not commercially available in the SFBAAB. If an exception is granted pursuant to this	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		section, the project sponsor shall provide another type of alternative fuel, such as biodiesel (B20 or higher). v. Prior to any waiver sought by a project sponsor, the sponsor shall provide documentation demonstrating that by granting the waiver, the project would not exceed any applicable criteria air pollutant threshold. 2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable State regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit. 3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications. 4. The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel use and hours of operation. For the VDECS installed: technology type, serial number, make, model, manufacturer, air board verification number level, and installation date and hour meter reading on installation date. For off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used. 5. The construction emissions minimization plan shall be kept on-site and available for review during working hours by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the construction emissions minimization plan and a way to request a copy of the Plan. The project sponsor shall provide copies of the Plan as requested. 6. Reporting. Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 4, above. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		phase, the report shall include detailed information required in Paragraph 4. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used. 7. Certification Statement and On-site Requirements. Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the construction emissions minimization plan, and (2) all applicable requirements of the construction emissions minimization plan have been incorporated into contract specifications. It should be noted that for specialty equipment types (e.g., drill rigs, shoring rigs and concrete pumps) it may not be feasible for construction contractors to modify their current, older equipment to accommodate the particulate filters, or for them to provide newer models with these filters pre-installed. Therefore, alternative compliance options are provided for in Mitigation Measure M-AQ-4b.	
Impact AQ-5. During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	S	***M-AQ-5a: Educate Residential and Commercial Tenants Concerning Low-VOC Consumer Products.*** Prior to receipt of any building permit and every five years thereafter, the project sponsor shall develop electronic correspondence to be distributed by email or posted on-site annually to tenants of the project that encourages the purchase of consumer products and paints that are better for the environment and generate less volatile organic compound (VOC) emissions. The correspondence shall encourage environmentally preferable purchasing and shall include contact information and links to SF Approved.[6] ***M-AQ-5b: Reduce Operational Emissions for Projects That Exceed Criteria Air Pollutant Thresholds.*** Proposed projects that would exceed the criteria air pollutant thresholds shall implement the additional measures, as applicable and feasible, to reduce operational criteria air pollutant emissions. Such measures may include, but are not limited to, the following: • For any proposed refrigerated warehouses or large (greater than 20,000 square feet) grocery retailers, provide electrical hook-ups for diesel trucks with Transportation Refrigeration Units at the loading docks. • Use low- and super-compliant VOC architectural coatings in maintaining buildings. "Low-VOC" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District Rule 1113; however, many manufacturers have reformulated to levels well below these limits. These are referred to as "Super-Compliant" architectural coatings.	SUM

6 SF Approved (sfapproved.org) is administrated by the San Francisco Department of Environment staff, who identifies products and services that are safer and better for the environment (e.g., those that are listed as "Required" or "Suggested").

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		• Other measures that become available and are shown to effectively reduce criteria air pollutant emissions onsite or offsite if emissions reductions are realized within the air basin. Measures to reduce emissions onsite are preferable to offsite emissions reductions. ***M-AQ-5c: Best Available Control Technology for Projects with Diesel Generators and Fire Pumps.*** All diesel generators and fire pumps shall have engines that (1) meet Tier 4 Final or Tier 4 Interim emission standards, or (2) meet Tier 2 emission standards and are equipped with a California Air Resources Board Level 3 Verified Diesel Emissions Control Strategy. All diesel generators and fire pumps shall be fueled with renewable diesel, R99, if commercially available. Additional restrictions limiting the hours per year that generators may be tested may also be required, as determined necessary by San Francisco Planning Department. Each new diesel backup generator or fire pump permit submitted for a project, including any associated generator pads, engine and filter specifications shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator or fire pump from the San Francisco Department of Building Inspection. Once operational, all diesel backup generators and Verified Diesel Emissions Control Strategy shall be maintained in good working order in for the life of the equipment and any future replacement of the diesel backup generators, fire pumps, and Level 3 Verified Diesel Emissions Control Strategy filters shall be required to be consistent with these emissions specifications. The operator of the facility at which the generator or fire pump is located shall maintain records of the testing schedule for each diesel backup generator and fire pump for the life of that diesel backup generator and fire pump and provide this information for review to the Planning Department within three months of requesting such information.	
Impact AQ-6. During construction or operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact AQ-7. The Hub Plan would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	S	Implement ***Mitigation Measure M-AQ-5c: Best Available Control Technology for Diesel Generators and Fire Pumps***. ***M-AQ-7a: Additional Air Quality Improvement Strategies to Reduce Hub Plan-Generated Emissions and Population Exposure.*** The planning department, in cooperation with other interested agencies or organizations, shall consider additional actions for the Hub Plan area with the goal of reducing Hub Plan–generated emissions and population exposure including, but not limited to: • Collection of air quality monitoring data that could provide decision makers with information to identify specific areas of the Hub Plan were changes in air quality have occurred and focus air quality improvements on these areas; • Additional measures that could be incorporated into the City's Transportation Demand Management program with the goal of further reducing vehicle trips; • Incentives for replacement or upgrade of existing emissions sources; • Other measures to reduce air pollutant exposure, such as the distribution of portable air cleaning devices; and • Public education regarding reducing air pollutant emissions and their health effects. The department shall develop a strategy to explore the feasibility of additional air quality improvements within four years of Hub Plan adoption. ***M-AQ-7b: Air Quality Analysis That Considers the Siting of Uses That Emit Particulate Matter ($PM_{2.5}$), Diesel Particulate Matter, or Other Toxic Air Contaminants.*** To minimize potential exposure of sensitive receptors to diesel particulate matter or substantial levels of toxic air contaminants as part of everyday operations from stationary or area sources (other than the sources in Mitigation Measure M-AQ-5c), the San Francisco Planning Department shall require, during the environmental review process of subsequent development projects, but not later than the first project approval action, the preparation of an analysis by a qualified air quality specialist that includes a site survey to identify residential or other sensitive receptors within 1,000 feet of the project site. For purposes of this measure, sensitive receptors are considered to include housing units; child care centers; schools (high school age and below); and inpatient health care facilities, including nursing or retirement homes and similar establishments. The assessment shall also include an estimate of emissions of toxic air contaminants from the source from the subsequent development and shall identify all feasible measures to reduce emissions. These measures shall be incorporated into the project prior to the first approval action. ***M-AQ-7c: Design Land Use Buffers Around Active Loading Docks.*** For subsequent development projects that include loading docks that would be expected to accommodate more than 100 trucks per day (or 40 transportation refrigeration trucks per day), locate truck activity areas, including	SUM

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		loading docks and delivery areas, as far away from sensitive receptors (such as residences, child care, or medical facilities) as feasible. ***M-AQ-7d: Implementation of Mitigation Measures M-AQ-4b and M-AQ-5c for Projects within the Existing or Future Air Pollutant Exposure Zone.*** All construction within the existing APEZ or newly added parcels that meet the APEZ criteria (Block 3505, Lots 007 and 008; Block 3503, Lot 004; and Block 0814, Lot 003)shall implement M-AQ-4b. All subsequent development projects that include diesel generators or diesel fire pumps within the existing APEZ or newly added parcels that meet the APEZ criteria as listed above, shall implement Mitigation Measure M-AQ-5c. ***M-AQ-7e: Update Air Pollution Exposure Zone.*** The Department of Public Health in coordination with the planning department is required to update the Air Pollution Exposure Zone Map in San Francisco Health Code article 38 at least every five years. The planning department shall coordinate with the Department of Public Health to update the Air Pollution Exposure Zone, taking into account updated health risk methodologies and traffic generated by the Hub Plan.	
Impact AQ-8. Construction and operational activities associated with the streetscape and street network improvements proposed as part of the Hub Plan would not result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	LTS	None required.	NA
Impact AQ-9. During construction and operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	S	Implement ***Mitigation Measure M-AQ-5c: Best Available Control Technology for Projects with Diesel Generators and Fire Pumps.*** ***M-AQ-9a: Construction Emissions Minimization Plan for 30 Van Ness Avenue Project.*** Prior to construction, the 30 Van Ness Avenue Project sponsor shall submit a construction emissions minimization plan to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. Upon approval of construction emissions minimization plan, the sponsor shall implement the plan. The plan shall detail project compliance with the following requirements: 1. All construction equipment shall contain engine tiers consistent with the U.S. Environmental Protection Agency engine tiers as provided in **Table M-AQ-9a**, Construction Equipment Summary for 30 Van Ness Avenue Project, below. Documentation of equipment tiers for in-use equipment shall be maintained onsite as part of the plan. 2. All off-road engines shall be fueled with renewable diesel (at least 99 percent renewable	LTS

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		diesel or R99), if commercially available. 3. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit. 4. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications. 5. The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel use and hours of operation. The construction emissions minimization plan shall be kept onsite and available for review during working hours by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the construction emissions minimization plan and a way to request a copy of the plan. The project sponsor shall provide copies of the plan as requested. Should any deviations from the requirements or the equipment in **Table M-AQ-9a** be proposed prior to or during construction, the project sponsor shall demonstrate, to the satisfaction of the ERO, that an equivalent amount of emissions reduction would be achieved. *Reporting*. Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 5, above.	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation

TABLE M-AQ-9A: CONSTRUCTION EQUIPMENT SUMMARY FOR 30 VAN NESS AVENUE PROJECT

Phase	Project Equipment at Site	Horsepower	Equipment Quantity	Usage Hours per Weekday	Usage Hours per Saturday	Controlled Equipment Details		Equipment Usage Data	
						Fuel	Control	Start	End
Demolition	Concrete/Industrial Saws	81	1	2.0	2.0	Diesel	Tier 4f	5/1/2020	11/1/2020
	Rubber Tired Dozers	247	1	1.0	1.0	Diesel	Tier 4f	5/1/2020	11/1/2020
	Sweepers/Scrubbers	64	1	2.0	2.0	Diesel	Tier 4f	5/1/2020	11/1/2020
	Excavators	158	1	2.4	2.4	Diesel	Tier 4f	5/1/2020	11/1/2020
Site Preparation	Tractors/Loaders/Blackhoes	97	1	8.0	8.0	Diesel	Tier 4f	11/2/2020	1/31/2021
	Excavators	158	3	8.0	8.0	Diesel	Tier 4f	11/2/2020	1/31/2021
	Road Cleaner/Sweepre/Scrubber	64	1	4.0	4.0	Diesel	Tier 4f	11/2/2020	1/31/2021
Grading	Rubber Tired Dozers	247	1	1.0	1.0	Diesel	Tier 4f	2/1/2021	4/30/2021
	Tractors/Loaders/Backoes	97	2	6.0	6.0	Diesel	Tier 4f	2/1/2021	4/30/2021
	Shoring Equipment (Boring Rigs)	221	2	2.4	2.4	Diesel	Tier 4f	2/1/2021	3/1/2021
	Tie Back Equipment (Drilling Rigs)	221	2	2.4	2.4	Diesel	Tier 4f	3/2/2021	3/30/2021
	Ground Improvement (Drilling Rig)	221	1	2.4	2.4	Diesel	Tier 4f	4/1/2021	4/30/2021
	Sweepers/Scrubbers	64	1	8.0	8.0	Diesel	Tier 4f	2/1/2021	4/3/2021
Building Construction	Cranes	231	1	3.0	3.0	Electric	N/A	8/1/2021	12/1/2022
	Forklifts	89	2	4.5	4.5	Propane	N/A	5/1/2021	12/31/2023
	Tractors/Loaders/Backoes	97	2	2.0	2.0	Diesel	Tier 4f	5/1/2021	12/31/2023
	Tower Crane	231	1	3.0	3.0	Electric	N/A	9/1/2021	5/1/2022
	Aerial Lifts (#1)	63	1	8.0	8.0	Electric	N/A	11/1/2021	3/1/2023
	Aerial Lifts (#2)	63	1	8.0	8.0	Electric	N/A	11/1/2021	5/1/2022
	Concrete Pumps	84	2	2.0	2.0	Electric	N/A	7/1/2021	10/1/2022
	Welders	46	6	0.80	0.80	Electric	N/A	5/1/2021	12/31/2023
Paving	Tractors/Loaders/Backhoes	97	1	5.3	5.3	Diesel	Tier 4f	11/1/2022	5/1/2023
	Concrete/Industrial Saws	81	2	2.0	2.0	Diesel	Tier 4f	11/1/2022	5/1/2023
Architectural Coating	Air Compressors	78	1	3.0	3.0	Electric	N/A	11/1/2021	1/1/2023

Notes: Project equipment was provided by the project sponsor.
Abbreviations:
N/A = not applicable
Tier 4f = Tier 4 Final
Tier 4i = Tier 4 Interim

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 5. *Certification Statement and Onsite Requirements*. Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the construction emissions minimization plan, and (2) all applicable requirements of the construction emissions minimization plan have been incorporated into contract specifications. ***M-AQ-9b: Best Available Control Technology for Diesel Generators for 30 Van Ness Avenue Project.*** The two proposed diesel generators shall have engines that meet Tier 4 Final emission standards and be fueled with renewable diesel, R99, if commercially available. The project sponsor shall limit testing of the emergency diesel generators to no more than 20 hours per year. Each diesel backup generator permit shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator from the San Francisco Department of Building Inspection. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment and any future replacement of the diesel backup generators shall be required to be consistent with these emissions specifications. The project sponsor shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and provide this information for review to the planning department within three months of requesting such information. ***M-AQ-9c: Construction Emissions Minimization Plan for 98 Franklin Street Project.*** Prior to construction, the 98 Franklin Street Project sponsor shall submit a construction emissions minimization plan to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. Upon approval of plan, the sponsor shall implement the plan. The plan shall detail project compliance with the following requirements: 1. All construction equipment shall contain engine tiers consistent with the U.S. Environmental Protection Agency engine tiers as provided in Table M-AQ-9c, Construction Equipment Summary for 98 Franklin Street Project, below. Documentation of equipment tiers for in-use equipment shall be maintained onsite as part of the plan. 2. All off-road engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99), if commercially available.	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation

TABLE M-AQ-9C: CONSTRUCTION EQUIPMENT SUMMARY FOR 98 FRANKLIN STREET PROJECT

Phase	Project Equipment at Site	Horsepower	Equipment Quantity	Usage Hours per Weekday	Controlled Equipment Details		Equipment Usage Data	
					Fuel	Control	Start	End
Demolition	Concrete/Industrial Saws	81	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
	Excavators	67	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
	Rubber Tired Dozers	247	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
	Skid Steer Loaders	73	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
Shoring	Drill Rig	500	1	4.5	Diesel	Tier 4i	6/8/2021	8/7/2021
	Excavators	67	1	1.5	Diesel	Tier 4i	6/8/2021	8/7/2021
	Cranes	275	1	1.0	Diesel	Tier 4i	6/8/2021	8/7/2021
	Tieback rig	250	1	3.0	Diesel	Tier 4i	6/8/2021	8/7/2021
	Rough Terrain Forklift	100	1	1.0	Diesel	Tier 4i	6/8/2021	8/7/2021
	Generator	40	1	4.0	Diesel	Tier 4f	6/8/2021	8/7/2021
Excavation	Excavators	250	3	6.0	Diesel	Tier 4i	8/10/2021	10/30/2021
	Skid Steer Loaders	75	2	6.0	Diesel	Tier 4i	8/10/2021	10/30/2021
Building Construction	Cranes	231	1	3.0	Electric	N/A	11/2/2021	8/5/2023
	Forklifts	89	1	2.1	Propane	N/A	11/2/2021	8/5/2023
	Welders	46	2	0.16	Electric	N/A	11/2/2021	8/5/2023
	Sissor lifts	89	1	1.5	Electric	N/A	11/2/2021	8/5/2023
	Signal Boards	6.0	2	8.0	Electric	N/A	11/2/2021	8/5/2023
Paving	Pavers	130	1	4.0	Diesel	Tier 4i	8/1/2023	8/5/2023
	Rollers	50	1	4.0	Diesel	Tier 4i	8/1/2023	8/5/2023
Architectural Coating	Airless Paint Sprayers	78	3	4.0	Electric	N/A	1/7/2023	8/5/2023

Notes: Project equipment was provided by the project sponsor.
Abbreviations:
N/A = not applicable
Tier 4f = Tier 4 Final
Tier 4i = Tier 4 Interim

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		3. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit. 4. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications. 5. The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel use and hours of operation. The construction emissions minimization plan shall be kept onsite and available for review during working hours by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the construction emissions minimization plan and a way to request a copy of the plan. The project sponsor shall provide copies of the plan as requested. Should any deviations from the requirements or the equipment in Table M-AQ-9c be proposed prior to or during construction, the project sponsor shall demonstrate, to the satisfaction of the ERO, that an equivalent amount of emissions reduction would be achieved. *Reporting.* Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 5, above. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 5. *Certification Statement and Onsite Requirements*. Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the construction emissions minimization plan, and (2) all applicable requirements of the construction emissions minimization plan have been incorporated into contract specifications.	

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact AQ-10. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue or 98 Franklin Street, would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	None required.	NA
Impact C-AQ-1: The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions.	S	Implement ***Mitigation Measures M-AQ-4b, Construction Emissions Minimization Plan for Projects Above Screening Levels or That Exceed Criteria Air Pollutant Significance Thresholds or as Required in Impact AQ-7; M-AQ-5c, Best Available Control Technology for Projects with Diesel Generators and Fire Pumps; M-AQ-7a, Additional Air Quality Improvement Strategies to Reduce Hub Plan-Generated Emissions and Population Exposure; M-AQ-7b, Air Quality Analysis That Considers the Siting of Uses That Emit Particulate Matter ($PM_{2.5}$), Diesel Particulate Matter, or Other Toxic Air Contaminants; M-AQ-7c, Design Land Use Buffers Around Active Loading Docks; M-AQ-7d, Implementation of Mitigation Measures M-AQ-4b and M-AQ-5c for Projects within the Existing or Future Air Pollutant Exposure Zone;*** and ***M-AQ-7e, Update Air Pollution Exposure Zone***.	SUM
Impact C-AQ-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions.	S	Implement ***Mitigation Measures M-AQ-5c, Best Available Control Technology for Projects with Diesel Generators and Fire Pumps, M-AQ-9a, Construction Emissions Minimization Plan for 30 Van Ness Avenue Project, M-AQ-9b, Best Available Control Technology for Diesel Generators for 30 Van Ness Avenue Project, M-AQ-9c: Construction Emissions Minimization Plan for 98 Franklin Street Project.***	LTS
Wind			
Impact WI-1: The Hub Plan could create wind hazards in publicly accessible areas with substantial pedestrian use.	S	***M-WI-1a: Wind Analysis and Minimization Measures for Subsequent Projects.*** All projects proposed within the Hub Plan area that would have a roof height greater than 85 feet shall be evaluated by a qualified wind expert, in consultation with the San Francisco Planning Department, to determine their potential to result in a new wind hazard exceedance or aggravate an existing pedestrian-level wind hazard exceedance (defined as the one-hour wind hazard criterion with a 26 mph equivalent wind speed). If the qualified expert determines that wind-tunnel testing is required due to the potential for a new or	LTS

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		worsened wind hazard exceedance, such testing shall be undertaken in coordination with San Francisco Planning Department staff, with results summarized in a wind report. The buildings tested in the wind tunnel may incorporate only those wind baffling features that can be shown on plans. Such features must be tested in the wind tunnel and discussed in the wind report in the order of preference discussed below, with the overall intent being to reduce ground-level wind speeds in areas of substantial use by people walking (e.g., sidewalks, plazas, building entries, etc.): 1. ***Building Massing***. New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these include setbacks, stepped facades, and vertical steps in the massing to help disrupt downwashing flows. 2. ***Wind Baffling Measures on the Building and on the Sponsor's Private Property.*** Wind baffling measures shall be included on future buildings and/or on the sponsor's private property to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, landscaping, free-standing canopies, or wind screens.[7] Only after documenting all feasible attempts to reduce wind impacts via building massing and wind baffling measures on a building, shall the following be considered: **3.** ***Landscaping and/or Wind Baffling Measures in the Public Right-of-Way***. Landscaping and/or wind baffling measures shall be installed to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side of the areas of concern (i.e., the direction from which the wind is blowing).[8] Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger. If landscaping or wind baffling measures are required as one of the features to mitigate wind impacts, ***Mitigation Measure M-WS-1b*** (below) shall also apply.	

7 Solid windscreens have a greater effect at reducing the wind speeds to immediate leeward side of the screens; however, outside of this area of influence, the winds are either unaffected or accelerated. Porous windscreens have less of an impact to the immediate leeward side; however, they have an increased area of influence and are less likely to cause any accelerations of the winds further downwind.

8 Landscaping typically impacts winds locally; the larger the tree crown and canopy, the greater the area of influence. Tall, slender trees with little foliage have little to no impact on local winds speeds at ground level because of the height of the foliage above ground. Shorter street trees with larger canopies help reduce winds around them but their influence on conditions farther away is limited.

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		M-WI-1b:Maintenance Plan for Landscaping and Wind Baffling Measures in the Public Right-of-Way. If it is determined that an individual subsequent development project could not reduce additional wind hazards via massing or wind baffling measures on the subject building, the project sponsors shall prepare a maintenance plan for review and approval by the San Francisco Planning Department to ensure maintenance of the features in perpetuity.	
Impact WI-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would create wind hazards in publicly accessible areas with substantial pedestrian use.	S	Implement ***Mitigation Measure M-WI-1b: Maintenance Plan for Landscaping and Wind Baffling Measures in the Public Right-of-Way.***	LTS
Impact C-WI-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts.	S	Implement ***Mitigation Measures M-WI-1a, Wind Analysis and Minimization Measures for Subsequent Projects, and M-WI-1b, Maintenance Plan for Landscaping and Wind Baffling Measures in the Public Right-of-Way.***	SUM
Shadow			
Impact SH-1. The Hub Plan would create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	S	There is no feasible mitigation available to reduce this impact.	SU
Impact SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	LTS	None required.	NA

TABLE S-1. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT – IDENTIFIED IN THE EIR

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-SH-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts.	S	There is no feasible mitigation available to reduce this impact.	SU
Impact C-SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in cumulatively considerable shadow impacts.	LTS	None required.	NA

Legend: NI = No Impact; LTS = Less than significant impact, no mitigation required; S = Significant; SU = Significant and unavoidable impact, no feasible mitigation; SUM = Significant and unavoidable impact after mitigation; NA = Not Applicable

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Land Use and Planning			
Impact LU-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not physically divide an established community.	LTS	None required.	NA
Impact LU-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	None required.	NA
Impact C-LU-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to cumulative land use impacts.	LTS	None required.	NA
Aesthetics			
Impact AE-1: The Hub Plan would not have a substantial adverse effect on a scenic vista.	LTS	None required.	NA
Impact AE-2: The Hub Plan would not conflict with applicable zoning and other regulations governing scenic quality or substantially damage scenic resources.	LTS	None required.	NA
Impact AE-3: The Hub Plan would not create a new source of substantial light or glare in the Hub Plan area that would adversely affect daytime or nighttime views or substantially affect people or properties.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-AE-1: The Hub Plan, along with other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact on aesthetics.	LTS	None required.	NA
Population and Housing			
Impact PH-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not induce substantial unplanned population growth beyond that projected by regional forecasts, either directly or indirectly.	LTS	None required.	NA
Impact PH-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not generate housing demand beyond projected housing forecasts.	LTS	None required.	NA
Impact PH-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing outside of the Hub Plan area.	LTS	None required.	NA
Impact C-PH-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and, cumulatively, other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact on population or housing.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Cultural Resources			
See Table S-1. Summary of Impacts of the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street – Identified in the EIR			
Tribal Cultural Resources			
Impact TCR-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of a tribal cultural resource.	S	***M-TCR-1: Project-Specific Tribal Cultural Resources Assessment for Projects Involving Ground Disturbance***. This tribal cultural resources cultural mitigation measure shall apply to any project involving any soils-disturbing or soils-improving activities including excavation, utilities installation, grading, soils remediation, or compaction/chemical grouting at depths that would extend into sand dune and marsh deposits, which occurs at depths from 2 feet or more below the ground surface. Projects to which this mitigation measure applies shall be reviewed for the potential to affect a tribal cultural resource in tandem with Preliminary Archaeological Review of the project by the San Francisco Planning Department senior archaeologist. For projects requiring a Mitigated Negative Declaration or Environmental Impact Report, the San Francisco Planning Department "Notification Regarding Tribal Cultural Resources and the California Environmental Quality Act" shall be distributed to the San Francisco Planning Department tribal distribution list. Consultation with California Native American tribes regarding the potential of the project to affect a tribal cultural resource shall occur at the request of any notified tribe. For all projects subject to this mitigation measure, if the San Francisco Planning Department senior archaeologist determines that the proposed project may have a potential significant adverse effect on a tribal cultural resources, then the following shall be required as determined warranted by the Environmental Review Officer. If the Environmental Review Officer determines that preservation-in-place of the tribal cultural resource is both feasible and effective, based on information provided by the applicant regarding feasibility and other available information, then the project's archaeological consultant shall prepare an archaeological resource preservation plan. Implementation of the approved archaeological resource preservation plan by the archaeological consultant shall be required when feasible. If the Environmental Review Officer determines that preservation in place of the tribal cultural resource is not a sufficient or feasible option, then the project sponsor shall implement an interpretive program of the tribal cultural resource in coordination with	LTS

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		affiliated Native American tribal representatives. An interpretive plan produced in coordination with affiliated Native American tribal representatives, at minimum, and approved by the Environmental Review Officer shall be required to guide the interpretive program. The plan shall identify proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifact displays and interpretation, and educational panels or other informational displays	
Impact C-TCR-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on tribal cultural resources.	S	Implement Mitigation Measure ***M-TCR-1, Project-Specific Tribal Cultural Resources Assessment for Projects Involving Ground Disturbance.***	LTS
Transportation and Circulation			
See Table S-1. Summary of Impacts of the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street – Identified in the EIR			
Noise			
See Table S-1. Summary of Impacts of the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street – Identified in the EIR			
Air Quality			
See Table S-1. Summary of Impacts of the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street – Identified in the EIR			
Greenhouse Gas Emissions			
Impact C-GG-1: The Hub Plan would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-GG-2: The Hub Plan's streetscape and street network improvements and the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	LTS	None required.	NA
Wind			
See Table S-1. Summary of Impacts of the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street – Identified in the EIR			
Shadow			
See Table S-1. Summary of Impacts of the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street – Identified in the EIR			
Recreation			
Impact RE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would increase the use of existing parks and recreational facilities but would not result in substantial deterioration or physical degradation of such facilities or adverse physical environmental effects from development of new recreational facilities.	LTS	None required.	NA
Impact C-RE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on recreational resources.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Utilities and Service Systems			
Impact UT-1: Adequate water supplies are available to serve the Hub Plan, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and reasonably foreseeable future development in normal, dry, and multiple dry years, unless the Bay-Delta Plan Amendment is implemented; in that event, the SFPUC would develop new or expanded water supply facilities to address shortfalls in single and multiple dry years, which would occur with or without implementation of the Hub Plan. Impacts related to new or expanded water supply facilities cannot be identified at this time, and such facilities cannot be implemented in the near term. The SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects. However, the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not make a considerable contribution to impacts from increased rationing.	LTS	None required.	NA
Impact UT-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not require or result in the relocation, expansion, or construction of new wastewater treatment, stormwater, electric power, natural gas, or telecommunication facilities, or exceed capacity of the wastewater treatment provider when combined with other commitments.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact UT-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure, and comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	None required.	NA
Impact C-UT-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute to cumulative impacts on utilities and services.	LTS	None required.	NA
Public Services			
Impact PS-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would increase the demand for police service or fire protection service but not to such an extent that construction of new or expanded facilities would be required.	LTS	None required.	NA
Impact PS-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly generate school students and increase enrollment in public schools such that new or physically altered facilities would be required.	LTS	None required.	NA
Impact C-PS-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, combined with past, present, and reasonably foreseeable future projects in the vicinity, would not result in a cumulatively considerable contribution to cumulative impacts	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
on police, fire, and school district services such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required in order to maintain acceptable levels of service.			
Biological Resources			
Impact BI-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could have a substantial adverse effect, either directly or through habitat modifications, on 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.	S	***M-BI-1: California Fish and Game Code Compliance to Avoid Active Nests During Construction Activities***. For any project activities that result in tree removal or disturbance of existing trees through adjacent construction activities, project applicant(s) shall avoid impacts on nesting birds though compliance with relevant California Fish and Game Code by implementing one or more of the following: • Undertaking tree removal during the non-breeding season (i.e., September through January 15) to avoid impacts on nesting birds or conducting preconstruction surveys for work scheduled during the breeding season (March through August). • Conducting, by a qualified biologist, preconstruction surveys no more than 15 days prior to the start of work during the nesting season to determine if any birds are nesting in the vegetation to be removed or in the vicinity of the construction to be undertaken. • Avoiding any nests identified by a qualified biologist and establishing a construction-free buffer zone designated by a qualified biologist, which will be maintained until nestlings have fledged. ***M-BI-2: Avoid Impacts on Special-status Bat Roosts During Construction Activities:*** Project applicant(s) shall avoid impacts on maternity colonies or hibernating bats if identified by avoiding structural demolition between April 1 and September 15 (maternity season) and between October 30 and March 1 (hibernation) to the extent feasible. Bat roost avoidance shall be accomplished by the following steps: • The project applicant(s) shall retain a qualified biologist to conduct a bat habitat assessment of the structures proposed for demolition. The assessment may be conducted at any time of year but should be conducted during peak bat activity periods (March 1–April 15, September 1–October 15) if possible. Qualified biologists shall have	LTS

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		knowledge of the natural history of the species that could occur and sufficient experience related to determining bat occupancy in buildings and bat survey techniques. The biologist shall examine both the inside and outside of accessible structures for potential roosting habitat as well as routes of entry to the structures. If the biologist concludes that the building does not provide suitable bat roosting habitat, no further actions are necessary and work may commence. If the results of the survey are inconclusive or the biologist identifies potential roost sites, the following steps shall be implemented: • The project applicant(s) shall implement measures under the guidance of a qualified bat biologist to exclude bats from using the building as a roost site, such as sealing off entry points with one-way doors or enclosures. Installation of exclusion devices shall occur before maternity colonies establish or after they disperse, generally between March 1 and 30 or between September 15 and October 30, to preclude bats from occupying a roost site during demolition. Exclusionary devices shall be installed only by or under the supervision of an experienced bat biologist. • The qualified biologist shall conduct a follow-up survey to confirm that the exclusion measures have excluded bats. If follow-up surveys determine that bats are still present, the biologist shall modify the exclusion measures to effectively exclude bats from the structure. Following successful exclusion of the bats and confirmation of their absence by the biologist, demolition or structural modification shall commence.	
Impact BI-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, 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.	LTS	Improvement Measure: ***I-BI-2: Lighting Minimization during Hours of Darkness***. In compliance with the voluntary San Francisco Lights Out Program, the department could encourage buildings developed pursuant to the Hub Plan to implement bird-safe building operations to prevent or minimize bird-strike impacts, including, but not limited to, the following measures: • Reduce building lighting from exterior sources by: ○ Minimizing the amount and visual impact of perimeter lighting and façade uplighting and avoiding up-lighting on rooftop antennae and other tall equipment as well as of any decorative features	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation

		• Installing motion-sensor lighting
		  o Using low-wattage fixtures to achieve required lighting levels
		• Reduce building lighting from interior sources by:
		  o Dimming lights in lobbies, perimeter circulation areas, and atria
		  o Turning off all unnecessary lighting by 11 p.m. through sunrise, especially during peak migration periods (mid-March to early June and late August to late October)
		  o Using automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present
		• Encouraging the use of localized task lighting to reduce the need for more extensive overhead lighting
		  o Scheduling nightly maintenance to conclude by 11 p.m.
		  o Educating building users about the dangers of lighting to birds during hours of darkness	

Impact BI-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	None required.	NA
Impact C-BI-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on biological resources.	S	Implement Mitigation Measures ***M-BI-1, California Fish and Game Code Compliance to Avoid Active Nests During Construction Activities***, *and* ***M-BI-2, Avoid Impacts on Special-status Bat Roosts During Construction Activities***.	LTS
Geology and Soils			
Impact GE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not be subject to the effects of surface fault rupture.	NI	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact GE-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking.	LTS	None required.	NA
Impact GE-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly cause seismically induced ground failure, including liquefaction, earthquake-induced settlement, or landslides.	LTS	None required.	NA
Impact GE-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in substantial erosion or loss of topsoil.	LTS	None required.	NA
Impact GE-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not be located on a geologic unit or soil that is unstable or that could become unstable as a result of the project.	LTS	None required.	NA
Impact GE-6: The Hub Plan, as well as or individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create substantial risks to life or property as a result of location on expansive soils.	LTS	None required.	NA
Impact GE-7: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could directly or indirectly destroy a unique paleontological resource or site or geological feature.	S	***M-GE-1: Inadvertent Discovery of Paleontological Resources***. Before the start of any excavation activities, subsequent development projects proposed under the Hub (including the projects proposed at 30 Van Ness Avenue and 98 Franklin Street) that have the potential to encounter the Colma Formation shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in teaching non-specialists. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that are likely to be seen during construction, the proper notification procedures	LTS

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		should fossils be encountered, and the laws and regulations protecting paleontological resources. Depending on the location of the Colma Formation at a specific project site, the qualified paleontologist shall be contacted when earthmoving activities reach a depth of 12-27 feet to verify that workers are following the established procedures. If potential vertebrate fossils are discovered by construction crews, all earthwork or other types of ground disturbance within 25 feet of the find shall stop immediately, and the monitor shall notify the project sponsor, the qualified paleontologist, and the Environmental Review Officer. The fossil shall be protected by an "exclusion zone" (an area approximately 5 feet around the discovery that is marked with caution tape to prevent damage to the fossil). Work in the affected area shall not resume until a qualified professional paleontologist can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the qualified paleontologist may record the find and allow work to continue or recommend salvage and recovery of the fossil. The qualified paleontologist may also propose modifications to the stop-work radius, based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage is required, recommendations shall be consistent with Society of Vertebrate Paleontology's 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, as well as currently accepted scientific practice, and subject to review and approval by the Environmental Review Officer. If required, treatment for fossil remains may include preparation and recovery so they can be housed in an appropriate museum or university collection (e.g., the University of California Museum of Paleontology). This may also include preparation of a report for publication describing the finds. The department shall ensure that information on the nature, location, and depth of all finds is readily available to the scientific community through university curation or other appropriate means. The project sponsor shall be responsible for ensuring that the paleontologist's recommendations regarding treatment and reporting are implemented, including the costs necessary to prepare and identify collected fossils and any curation fees charged for university or museum storage.	

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-GE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, and reasonably foreseeable future projects, would not result in a considerable contribution to cumulative impacts related to geology, soils, and seismicity.	LTS	None required.	NA
Hydrology and Water Quality			
Impact HY-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and would not conflict with or obstruct implementation of a water quality control plan.	LTS	None required.	NA
Impact HY-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin or conflict with or obstruct implementation of a sustainable groundwater management plan.	LTS	None required.	NA
Impact HY-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact HY-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, or substantially increase the rate or amount of surface runoff in manner that would result in flooding onsite or offsite.	LTS	None required.	NA
Impact HY-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street and, would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LTS	None required.	NA
Impact HY-6: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not impede or redirect floodflows.	NI	None required.	NA
Impact C-HY-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to cumulative impacts on hydrology and water quality.	LTS	None required.	NA
Hazards and Hazardous Materials			
Impact HZ-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact HZ-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create a significant hazard for the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. In addition, development under the Hub Plan, as well as the individual development projects, could occur on the site(s) identified on the list of hazardous materials sites compiled pursuant to Government Code section 65962.5 but compliance with regulations would ensure that impacts remain less than significant.	LTS	None required.	NA
Impact HZ-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not expose workers and the public to hazardous building materials, including asbestos-containing materials, lead-based paint, polychlorinated biphenyls, bis(2-ethylhexyl) phthalate, and mercury, during demolition and building removal or result in a release of these materials into the environment during construction.	LTS	None required.	NA
Impact HZ-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	LTS	None required.	NA
Impact HZ-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not impair implementation of or physically interfere with an	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
adopted emergency response plan or emergency evacuation plan.			
Impact C-HZ-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact related to hazards and hazardous materials.	LTS	None required.	NA
Mineral Resources			
None.			
Energy			
Impact EN-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation; or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	None required.	NA
Impact C-EN-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	None required.	NA

TABLE S-2. SUMMARY OF IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE PROJECT, AND 98 FRANKLIN STREET PROJECT IDENTIFIED IN THE INITIAL STUDY (SEE APPENDIX B)

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Agriculture and Forestry Resources			
Impact AG-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not (a) convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; (b) conflict with existing zones for agricultural use or a Williamson Act contract; (c) conflict with existing zoning for, or cause rezoning of, forestland or timberland; (d) result in the loss of forestland or conservation of forestland to non-forest use; or (e) involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or forestland to non-forest use.	NI	None required.	NA
Impact C-AG-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in impacts on agriculture and forestry resources.	NI	None required.	NA
Wildfire			
None.			

Legend: NI = No Impact; LTS = Less than significant impact, no mitigation required; S = Significant; SU = Significant and unavoidable impact, no feasible mitigation; SUM = Significant and unavoidable impact after mitigation; NA = Not Applicable

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Description	The Hub Plan would implement changes to current zoning controls, including changes to height and bulk districts for select sites, to allow more housing, including more affordable housing. Modifications to land use zoning controls would also allow more flexibility for development of nonresidential uses, specifically office, institutional, art, and public uses. The Hub Plan also calls for public realm improvements to streets and alleys within and adjacent to the Hub Plan area, such as sidewalk widening, streetlight upgrades, median realignment, road and vehicular parking reconfiguration, tree planting, and the addition of bulb-outs. The proposed project at 30 Van Ness Avenue includes retention of portions of the existing 75-foot-tall, five-story building and construction of a 45-story building with ground-floor retail space, 11 floors of office space, and approximately 33 floors of residential space. The proposed project at 98 Franklin Street includes demolition of the existing 100-space surface vehicular parking lot and construction of a 31-story residential tower above a five-story podium that would be occupied by new high school facilities for the International High School (grades 9–12 of FAIS).	Buildout according to current land use controls for zoning, height, and bulk specifications as specified in the Market and Octavia Area Plan.	Assumes the same policies, planning code and general plan amendments as with the Hub Plan and Hub HSD, except that this alternative would exclude implementation of the Hub Plan's proposed streetscape and street network improvements.	Modifies the buildout assumptions at the 18 sites identified for height and bulk increases. Requires that all projects involving historic resources conform to the Secretary of the Interior's Standards for Rehabilitation.	No change to existing conditions.	Partial retention of the existing office/retail building and construction of an approximately 11-story building with ground-floor retail space and 10 floors of office space, reaching a height of approximately 150 feet.	No change to existing conditions.	Construction of a 120-foot (10-story) building that includes 54,505 square feet of residential uses, 81,000 square feet of school uses, 23,753 square feet of parking uses, and 3,100 square feet of retail uses.
Ability to Meet Project Sponsor's Objectives	Meets all of the sponsor's objectives.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would achieve most but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would not meet any of the sponsor's objectives.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would not meet any of the sponsor's objectives.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.
Land Use and Planning								
Physical Division of Community	Impact LU-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not physically divide an established community.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Conflict with Land Use Plans	Impact LU-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Land Use	Impact C-LU-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to cumulative land use impacts.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Aesthetics								
Scenic Vista	Impact AE-1: The Hub Plan would not have a substantial adverse effect on a scenic vista.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Conflict with Zoning and Scenic Quality	Impact AE-2: The Hub Plan would not conflict with applicable zoning and other regulations governing scenic quality or substantially damage scenic resources.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Light and Glare	Impact AE-3: The Hub Plan would not create a new source of substantial light or glare in the Hub Plan area that would adversely affect daytime or nighttime views or substantially affect people or properties.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Aesthetics	Impact C-AE-1: The Hub Plan, along with other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact on aesthetics.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Population and Housing								
Population Growth	Impact PH-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not induce substantial unplanned population growth beyond that projected by regional forecasts, either directly or indirectly.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Housing Demand	Impact PH-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not generate housing demand beyond projected housing forecasts.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Replacement Housing	Impact PH-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing outside of the Hub Plan area.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Population and Housing	Impact C-PH-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and, cumulatively, other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact on population or housing.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cultural Resources								
Historical Resources	Impact CUL-1: The Hub Plan could cause a substantial adverse change in the significance of individual built environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code.	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Historical Resources	Impact CUL-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a substantial adverse change to individual built environment resources and/or historic districts, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Historical Resources	Impact CUL-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of an individual built environment resource and/or historic district, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code, from ground-borne vibration caused by temporary construction activities.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Archeological Resources	Impact CUL-4. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could cause a substantial adverse change in the significance of an archaeological resource, as defined in section 15064.5.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Human Remain	Impact CUL-5. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could disturb human remains, including those interred outside of formal cemeteries.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Historical Resources	Impact C-CUL-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built environment resources.	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Cumulative Historical Resources	Impact C-CUL-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in demolition and/or alteration of built environment resources.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Archeological Resources	Impact C-CUL-3. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, could result in a significant cumulative impact on archaeological resources and human remains.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Tribal Cultural Resources								
Change in Significance	Impact TCR-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of a tribal cultural resource.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Tribal Consultation Resources	Impact C-TCR-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on tribal cultural resources.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Transportation and Circulation								
Circulation Interference	Impact TR-1. The Hub Plan would require an extended duration for the construction period and intense construction activity, the secondary effects of which could create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit.	Less than the proposed Hub Plan. (SU)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Circulation Interference	Impact TR-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not require an extended duration for the construction period or intense construction activity, the secondary effects of which could not create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
VMT	Impact TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not cause substantial additional VMT or induced automobile travel.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Driving Hazards	Impact TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create major driving hazards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Transit Delay and Hazards	Impact TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially delay local or regional transit or create potentially hazardous conditions for public transit providers.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Hazardous Conditions	Impact TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people walking or otherwise interfere with accessibility for people walking to the project site or adjoining areas.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Hazardous Conditions	Impact TR-7. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people bicycling or otherwise interfere with bicycle accessibility.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Loading	Impact TR-8. The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off-street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people bicycling, or people walking.	Similar to the proposed Hub Plan. (SU)	Similar to the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Loading	Impact TR-9. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would accommodate commercial vehicle and passenger loading demand.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Parking	Impact TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in a substantial vehicular parking deficit.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Emergency Access	Impact TR-11. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in inadequate emergency access.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Construction	Impact C-TR-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts.	Less than the proposed Hub Plan. (SU)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (SUM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (SUM)
Cumulative VMT	Impact C-TR-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not cause substantial additional VMT or substantially induce automobile travel.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Traffic Hazards	Impact C-TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to traffic hazards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Transit Impacts	Impact C-TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative transit impacts.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Pedestrians	Impact C-TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts on people walking.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Bicyclists	Impact C-TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative bicycle impacts.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Loading	Impact C-TR-7. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative loading impacts.	Similar to the proposed Hub Plan. (SU)	Similar to the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	NA	NA	NA	NA

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Loading	Impact C-TR-8. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not contribute considerably to significant cumulative loading impacts.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Parking	Impact C-TR-9. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative vehicular parking impacts.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Emergency Access	Impact C-TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to emergency access.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Noise								
Construction Noise	Impact NOI-1. During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Construction Noise	Impact NOI-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Construction Vibration	Impact NOI-3. Construction of the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would generate excessive ground-borne vibration or ground-borne noise levels.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTSM)
Operational Noise	Impact NOI-4. During operations, the Hub Plan would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Operational Noise	Impact NOI-5. Operations of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTSM)
Cumulative Construction Noise	Impact C-NOI-1. Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets, in combination with other past, present, and reasonably foreseeable future projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (SUM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (SUM)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Construction Vibration	Impact C-NOI-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of excessive ground-borne vibration or ground-borne noise levels during construction.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTS)
Cumulative Operational Noise	Impact C-NOI-3. Operation of the Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Cumulative Operational Noise	Impact C-NOI-4. Operation of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTS)
Air Quality								
Conflict with Clean Air Plan	Impact AQ-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue or 98 Franklin Street, would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Similar to the proposed 98 Franklin Street Project. (LTS)	Similar to the proposed 98 Franklin Street Project. (LTS)
Criteria Air Pollutants	Impact AQ-2. The Hub Plan would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-3. The construction and operation of streetscape and street network improvements proposed as part of the Hub Plan would not result in a cumulatively considerable net increase in criteria pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (NI)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-4. During construction, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-5. During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Criteria Air Pollutants	Impact AQ-6. During construction or operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a cumulatively considerable net increase in criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
$PM_{2.5}$ and TACs	Impact AQ-7. The Hub Plan would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	Less than the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
$PM_{2.5}$ and TACs	Impact AQ-8. Construction and operational activities associated with the streetscape and street network improvements proposed as part of the Hub Plan would not result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (NI)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
$PM_{2.5}$ and TACs	Impact AQ-9. During construction and operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Odors	Impact AQ-10. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue or 98 Franklin Street, would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative $PM_{2.5}$ and TACs	Impact C-AQ-1: The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions.	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Cumulative $PM_{2.5}$ and TACs	Impact C-AQ-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Greenhouse Gas Emissions								
Cumulative GHG	Impact C-GG-1: The Hub Plan would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative GHG	Impact C-GG-2: The Hub Plan's streetscape and street network improvements and the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)
Wind								
Wind in Outdoor Public Areas	Impact WSI-1: The Hub Plan could create wind hazards in publicly accessible areas with substantial pedestrian use.	Less than the proposed Hub Plan. (LTSM)	Same as the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Wind in Outdoor Public Areas	Impact WI-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create wind hazards in publicly accessible areas with substantial pedestrian use.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Wind in Outdoor Public Areas	Impact C-WI-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts.	Less than the proposed Hub Plan. (SUM)	Same as the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (SUM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (SUM)
Shadow								
Outdoor Public Areas	Impact SH-1. The Hub Plan would create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	Similar to the proposed Hub Plan. (SU)	Same as the proposed Hub Plan. (SU)	Less than the proposed Hub Plan. (SU)	NA	NA	NA	NA
Outdoor Public Areas	Impact SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Outdoor Public Areas	Impact C-SH-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts.	Similar to the proposed Hub Plan. (SU)	Same as the proposed Hub Plan. (SU)	Less than the proposed Hub Plan. (SU)	NA	NA	NA	NA
Cumulative Outdoor Public Areas	Impact C-SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in cumulatively considerable shadow impacts.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Recreation								
Use of Facilities	Impact RE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would increase the use of existing parks and recreational facilities but would not result in substantial deterioration or physical degradation of such facilities or adverse physical environmental effects from development of new recreational facilities.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Recreation Impacts	Impact C-RE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on recreational resources.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Utilities and Service Systems								
Water Supply	Impact UT-1: Adequate water supplies are available to serve the Hub Plan, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and reasonably foreseeable future development in normal, dry, and multiple dry years, unless the Bay-Delta Plan Amendment is implemented; in that event, the SFPUC would develop new or expanded water supply facilities to address shortfalls in single and multiple dry years, which would occur with or without implementation of the Hub Plan. Impacts related to new or expanded water supply facilities cannot be identified at this time, and such facilities cannot be implemented in the near term. The SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects. However, the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not make a considerable contribution to impacts from increased rationing.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Expansion of Utilities	Impact UT-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not require or result in the relocation, expansion, or construction of new wastewater treatment, stormwater, electric power, natural gas, or telecommunication facilities, or exceed capacity of the wastewater treatment provider when combined with other commitments.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Solid Waste	Impact UT-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure, and comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Utilities	Impact C-UT-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute to cumulative impacts on utilities and services.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Public Services								
Demand for Services	Impact PS-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would increase the demand for police service or fire protection service but not to such an extent that construction of new or expanded facilities would be required.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Schools	Impact PS-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly generate school students and increase enrollment in public schools such that new or physically altered facilities would be required.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Public Services	Impact C-PS-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, combined with past, present, and reasonably foreseeable future projects in the vicinity, would not result in a cumulatively considerable contribution to cumulative impacts on police, fire, and school district services such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required in order to maintain acceptable levels of service.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Biological Resources								
Sensitive Species	Impact BI-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could have a substantial adverse effect, either directly or through habitat modifications, on 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.	Less than the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Migration	Impact BI-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, 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.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Conflict with Existing Policies	Impact BI-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Biological Resources	Impact C-BI-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on biological resources.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Geology and Soils								
Surface Fault Rupture	Impact GE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not be subject to the effects of surface fault rupture.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Seismic Ground Shaking	Impact GE-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking.	Less than to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Ground Failure	Impact GE-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly cause seismically induced ground failure, including liquefaction, earthquake-induced settlement, or landslides.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Erosion	Impact GE-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in substantial erosion or loss of topsoil.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Geologic Unit/Unstable Soil	Impact GE-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not be located on a geologic unit or soil that is unstable or that could become unstable as a result of the project.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Expansive Soils	Impact GE-6: The Hub Plan, as well as or individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create substantial risks to life or property as a result of location on expansive soils.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Paleontological Resources	Impact GE-7: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could directly or indirectly destroy a unique paleontological resource or site or geological feature.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Geology and Soils	Impact C-GE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, and reasonably foreseeable future projects, would not result in a considerable contribution to cumulative impacts related to geology, soils, seismicity, and paleontological resources.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Hydrology and Water Quality								
Water Quality Control Plan	Impact HY-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and would not conflict with or obstruct implementation of a water quality control plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Groundwater	Impact HY-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin or conflict with or obstruct implementation of a sustainable groundwater management plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Drainage	Impact HY-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Drainage	Impact HY-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, or substantially increase the rate or amount of surface runoff in manner that would result in flooding onsite or offsite.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Drainage	Impact HY-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street and, would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Flooding	Impact HY-6: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not impede or redirect floodflows.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Hydrology	Impact C-HY-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to cumulative impacts on hydrology and water quality	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Hazards and Hazardous Materials								
Transit and Disposal	Impact HZ-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Upset and Accidental Conditions	Impact HZ-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create a significant hazard for the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. In addition, development under the Hub Plan, as well as the individual development projects, could occur on the site(s) identified on the list of hazardous materials sites compiled pursuant to Government Code section 65962.5 but compliance with regulations would ensure that impacts remain less than significant.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Building Materials	Impact HZ-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and (98 Franklin Street, would not expose workers and the public to hazardous building materials, including asbestos-containing materials, lead-based paint, polychlorinated biphenyls, bis(2-ethylhexyl) phthalate, and mercury, during demolition and building removal or result in a release of these materials into the environment during construction.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Schools	Impact HZ-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Emergency Response	Impact HZ-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Hazards	Impact C-HZ-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact related to hazards and hazardous materials.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE S-3. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Energy								
Construction and Operation	Impact EN-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation; or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Energy	Impact C-EN-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Agriculture and Forestry Resources								
Agriculture and Forestry	Impact AG-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not (a) convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; (b) conflict with existing zones for agricultural use or a Williamson Act contract; (c) conflict with existing zoning for, or cause rezoning of, forestland or timberland; (d) result in the loss of forestland or conservation of forestland to non-forest use; or (e) involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or forestland to non-forest use.	Less than the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)
Cumulative Agriculture and Forestry	Impact C-AG-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in impacts on agriculture and forestry resources.	Less than the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)

Legend: NI = No Impact; LTS = Less than significant impact, no mitigation required; S = Significant; SU = Significant and unavoidable impact, no feasible mitigation; SUM = Significant and unavoidable impact after mitigation; NA = Not Applicable

This Page Intentionally Left Blank

1. INTRODUCTION

This environmental impact report (EIR) evaluates potential environmental effects associated with implementation of the Hub Plan[1], 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD). The Hub Plan area is approximately 84 acres and located within the Downtown/Civic Center, South of Market (SoMa), Western Addition, and Mission Neighborhoods. The Hub Plan area consists of the Hub Plan, the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and the Hub HSD which would be designated within all or portions of the Hub Plan area.

The Hub Plan area is bounded by Haight Street from Octavia Boulevard to Gough Street, Gough Street from Haight Street to Page Street, Franklin Street from Page Street to Fell Street, Fell Street from Franklin Street to Van Ness Avenue, Van Ness Avenue from Fell Street to Hayes Street, Hayes Street from Van Ness Avenue to Larkin Street, Market Street from Ninth Street to 10th Street, midblock between 10th Street and 11th Street from Market Street to Mission Street, Mission Street from 10th Street to Washburn Street, a portion of Washburn Street, Minna Street from 10th Street to just past Lafayette Street (with certain lots excluded), midblock between Lafayette Street and 12th Street to Howard Street, Howard Street just north of 12th and 13th streets, and 13th Street to Octavia Boulevard and Haight Street, as shown in detail in **Figure 2-1**, p. 2-2, in Chapter 2, Project Description.

The Hub Plan is an amendment to the Market and Octavia Area Plan. It proposes to rezone portions of the Hub Plan area and incorporate public realm improvements (e.g., streetscape and street network improvements) to encourage housing, including affordable housing; create safer and more walkable streets as well as welcoming and active public spaces; increase transportation options by improving major streets and alleys to encourage walking, bicycling, and car-sharing; and create a neighborhood with a range of uses and services to meet neighborhood needs. The Hub Plan would pursue this vision through changes to current zoning controls applicable to the area, including changes to height and bulk districts for select sites to allow more housing. Modifications to land use zoning controls would also allow more flexibility for development of nonresidential uses, specifically office, institutional, art, and public uses.

The proposed project at 30 Van Ness Avenue includes retention of portions of the existing 75-foot-tall, five-story building and construction of a 45-story building with ground-floor retail space, 11 floors of office space, and approximately 33 floors of residential space. The proposed project at 98 Franklin Street includes demolition of the existing 100-space surface vehicular

---

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

parking lot and construction of a 31-story residential tower above a five-story podium that would be occupied by new high school facilities for the International High School (grades nine–12 of the French American International School).

This EIR also evaluates the designation of portions or all of the Hub Plan area as an HSD, in accordance with Assembly Bill 73 (Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11). Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City and County of San Francisco (City) to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD.

This EIR analyzes implementation of the Hub Plan programmatically within the area delineated in **Figure 2-1**, p. 2-2, in Chapter 2, Project Description. This Draft EIR also evaluates two individual development projects within the Hub Plan area (i.e., the 30 Van Ness Avenue Project and 98 Franklin Street Project) at a project-specific level. Likewise, this Draft EIR studies the proposed streetscape and street network improvements at the project level because of the sufficiency of detailed information available. Lastly, this EIR acknowledges the implications of implementation of the Hub HSD in all or portions of the Hub Plan area.

A. Environmental Review Process

The San Francisco Planning Department (department), serving as lead agency responsible for administering the environmental review on behalf of the City, determined that preparation of an EIR was needed to evaluate potentially significant effects that could result from implementation of the Hub Plan, the two individual development projects, and the Hub HSD. The California Environmental Quality Act (CEQA) requires that before a decision can be made to approve a project (or in this case also a plan) that would result in potential adverse physical effects, an EIR must be prepared that fully describes the environmental effects of the project. An EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, identify mitigation measures to lessen or eliminate significant adverse impacts, and examine feasible alternatives to the project. The information contained in this EIR will be reviewed and considered by the decision-makers prior to a decision to approve, disapprove, or modify the Hub Plan, the two individual development projects, and the Hub HSD.

CEQA requires that the lead agency neither approve nor implement a project unless its significant environmental effects have been reduced to less-than-significant levels, essentially “eliminating, avoiding, or substantially lessening” the expected impact(s), except when certain findings are made. If the lead agency approves a project that would result in the occurrence of significant adverse impacts that cannot be mitigated to less-than-significant levels, the agency must state the reasons for its action in writing, demonstrate that its action is based on the EIR or other information in the record, and adopt a Statement of Overriding Considerations. A

Statement of Overriding Considerations provides substantial evidence of the balance of the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project.

On May 23, 2018, the department sent a Notice of Preparation (NOP) to governmental agencies, organizations, and persons who may have an interest in the proposed project. The NOP requested that agencies and interested parties comment on environmental issues that should be addressed in the EIR (see Appendix A). A scoping meeting was held on June 12, 2018, to explain the environmental review process for the Hub Plan, the two individual development projects, and the Hub HSD and provide an opportunity to take public comments related to the environmental issues of the Hub Plan and the individual development projects. The department considered the public comments received at the scoping meeting and prepared an initial study in order to focus the scope of the EIR by assessing which of the proposed project's environmental topics would not result in significant impacts on the environment. The initial study is included as an appendix to this EIR (see Appendix B). The initial study determined that the Hub Plan, the two individual development projects, and the Hub HSD would not result in significant environmental effects (in some cases, with mitigation identified in the initial study) for the following environmental topics:

- Land Use/Planning;
- Aesthetics;
- Population and Housing;
- Tribal Cultural Resources;
- Greenhouse Gas Emissions;
- Recreation;
- Utilities and Service Systems;
- Public Services;
- Biological Resources (significant impact identified, but mitigated through measures identified in the initial study);
- Geology and Soils (significant impact identified, but mitigated through measures identified in the initial study);
- Hydrology and Water Quality;
- Hazardous Materials (significant impact identified, but mitigated through measures identified in the initial study);
- Mineral Resources

- Energy
- Agricultural and Forest Resources
- Wildfire.

The following is a summary of the issues raised by the public and governmental agencies in response to the NOP prepared for the Hub Plan, the two individual development projects, and the Hub HSD. The general topic categories of the comments are shown in **bolded text**, followed by clarifying remarks or general statements in parentheses as well as a reference to where the comment is addressed in this EIR and initial study:

- **Project Description** (requests the type of planning document be specified; concern about affordable housing to be provided under the Hub Plan. This is discussed in Chapter 2, Project Description).
- **Population and Housing** (requests thorough analysis of the cumulative social impact of potential housing and office developments; requests discussion of steps to mitigate impact on lower income Tenderloin and SoMa community). The focus of CEQA is on physical environmental impacts, such as the impacts of a project on air quality or water quality. In general, socioeconomic effects are beyond the scope of the CEQA environmental review process, unless a link can be established between the anticipated socioeconomic effects of a proposed action and adverse physical environmental impacts (CEQA Guidelines section 15131(a), CEQA section 21082.2). Because there is no evidence that the Hub Plan would result in social and economic effects that would indirectly result in significant effects on the physical environment, this topic is not discussed in the EIR or initial study. Changes to the physical environment as a result of the Hub Plan are addressed in the appropriate environmental topics in this EIR and the accompanying initial study.
- **Transportation and Traffic** (request to analyze project with a threshold of significance of one vehicle mile traveled per capita; consider ride-hailing services impact on loading and possible mitigation; concern about vehicular parking and request for zero private vehicular parking for all new developments in the neighborhood; concern about mass transit impacts in the area; requests a community process where affected community members can give feedback on safer and walkable streets. These items are addressed in Section 3.B, Transportation and Circulation);
- **Wind** (request to include analysis of wind impacts on people bicycling and people walking. This is addressed in Section 3.E, Wind).
- **Alternatives** (request for additional alternatives with different vehicular parking ratios and vehicular traffic routes. This is addressed in Chapter 5, Alternatives).

During the 45-day period that this Draft EIR is available for public review, written comments on the accuracy and adequacy of the environmental analysis presented herein may be submitted to the department. Comments may also be given in person during the public hearing on the Draft EIR. Responses to all substantive comments received on the Draft EIR and submitted within the specified review period will be included and responded to in the Response to Comments document. The Response to Comments document will also contain any minor staff-initiated changes to the Draft EIR. The Draft EIR and the Response to Comments constitute the Final EIR. Prior to approval of the proposed project, the Planning Commission must certify the Final EIR is adequate, accurate, and complete and adopt environmental findings and a mitigation monitoring and reporting program for mitigation measures identified in this Draft EIR or modified by the Response to Comments document.

B. Purpose of This EIR

This EIR is intended as an informational document that in and of itself does not determine whether the Hub Plan, the two individual development projects, the Hub HSD, or any component, such as the Hub Plan's streetscape and street network improvements, will be approved. The EIR aids the planning and decision-making process by disclosing the potential for significant and adverse impacts. In conformance with CEQA, California Public Resources Code sections 21000 et seq., this EIR provides objective information for addressing the environmental consequences of the Hub Plan, the two individual development projects, and the Hub HSD and identifies the means for reducing or avoiding its significant impacts where feasible.

The CEQA Guidelines help define the role and expectations of this EIR as follows:

- **Information Document.** An EIR is an informational document that informs public agency decision-makers and the public of the significant environmental effect(s) of a project, identifies feasible ways to avoid or minimize significant effects, and describes reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information contained in the administrative record (section 15121(a)).
- **Degree of Specificity.** An EIR on a construction project necessarily will be more detailed in the specific effects of the project than will an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy. An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow (section 15146(b)). As noted above, this EIR is a program-level EIR, pursuant to CEQA Guidelines section 15168, for the Hub Plan. In addition, this EIR

is a project-level EIR, pursuant to CEQA Guidelines section 15161, for the two individual development projects (30 Van Ness Avenue and 98 Franklin Street) and the streetscape and street network improvements. A project-level EIR focuses on changes in the environment that would result from construction and operation of a specific development project. Lastly, this EIR evaluates implementation of the Hub HSD in all or portions of the Hub Plan area.

- **Standards for Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good-faith effort at full disclosure (section 15151).

The CEQA Guidelines section 15382, define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." Therefore, in identifying the significant impacts of the proposed project, this EIR concentrates on its substantial physical effects and on mitigation measures to avoid or reduce those effects.

PROGRAM- AND PROJECT-LEVEL REVIEW OF POTENTIAL IMPACTS

As noted above, this EIR contains analysis at a program level, pursuant to CEQA Guidelines section 15168, for adoption and implementation of the Hub Plan; project-level environmental review, pursuant to CEQA Guidelines section 15161, for the two individual development projects (30 Van Ness Avenue and 98 Franklin Street) and the streetscape and street network improvements; and evaluation of the designation of portions or all of the Hub Plan area as an HSD. A program EIR is appropriate for a project that will involve a series of actions that are (1) related geographically, (2) logical parts in a chain of contemplated actions, (3) connected as part of a continuing program, and (4) carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines section 15168).

The EIR's evaluation of the Hub Plan is programmatic. Its assessment of potential environmental impacts is based on the various Hub Plan components that are required for its implementation to facilitate its goals and objectives. CEQA Guidelines section 15168 notes that the use of a programmatic EIR "ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis; avoids duplicative reconsideration of basic policy considerations; allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time, when the agency has greater flexibility to deal with basic problems or cumulative impacts; and allows for a reduction in paperwork."

In addition to programmatic review of the Hub Plan, this Draft EIR evaluates two individual development projects within the Hub Plan area (i.e., the 30 Van Ness Avenue Project and 98 Franklin Street Project) at a project-specific level. Likewise, the Draft EIR studies the streetscape and street network improvements at the project level because of the sufficiency of detailed information available. The two individual development projects analyzed at the project level are being fully studied under CEQA, allowing for project approval following certification of the EIR. Future projects that arise from the Hub Plan, on the other hand, may be required to undergo additional CEQA analysis to disclose impacts particular to a specific project or project site that are not currently known and, thus, not able to be evaluated at this time. Lastly, this Draft EIR evaluates designation of portions or all of the Hub Plan area as an HSD, in accordance with Assembly Bill 73 (Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11). Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects that meet certain requirements within the HSD. Designation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Qualifying projects approved under the HSD would still be required to implement the mitigation measures identified in this EIR and comply with the adopted design review standards and all existing City laws and regulations. Projects that qualify under the provisions of the HSD would not be subject to further environmental review.

Analysis Assumptions

This EIR presents a set of reasonable assumptions (as described in Chapter 2, Project Description, and Chapter 3, Environmental Setting, Impacts, and Mitigation Measures) pertaining to the overall types and levels of activities that the City anticipates under the Hub Plan as the basis for evaluating the environmental impacts of the Hub Plan, the two individual development projects, and the Hub HSD. Within this context, components such as general plan amendments and zoning map amendments to update the Market and Octavia Area Plan, planning code amendments, and other related actions are those that may in some way result in indirect physical changes in the environment and therefore are considered in the evaluation of potential impacts. As previously mentioned, the Hub Plan is an amendment to the Market and Octavia Area Plan. For projects within the boundaries of the Hub Plan mitigation measures identified in this EIR for the Hub Plan supersede those identified in the Market and Octavia Area Plan. Projects within the Market and Octavia Plan Area boundary, but outside the Hub Plan area boundary, would continue to be subject to the mitigation measures specified in the

Market and Octavia Area Plan EIR. Pertinent goals, objectives, and policies from the Hub Plan; the two individual development projects; and the Hub HSD are identified in Chapter 2, Project Description, and considered in the impact evaluations as applicable.

In addition, the analysis in CEQA documents typically presents existing and existing-plus-project scenarios to identify impacts by comparing conditions with the proposed project to existing conditions. However, in the study area, several transportation infrastructure projects and land use development projects are under construction or were recently completed. Some are approved and funded and therefore expected to be under construction or completed by the time the proposed project (i.e., development under the Hub Plan, including the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street) is under construction. Because of these changing conditions, a modified or future baseline, different from the existing conditions, was determined to be appropriate for the analyses presented in this EIR because an analysis based on existing conditions could be misleading to decision makers and the public.

The baseline includes land use development projects that were under construction at the time when the NOP was published (May 23, 2018). Transportation infrastructure projects that were approved and funded, and therefore likely to be completed by the time the proposed project would be under construction, are also included as part of baseline condition. This future baseline year was determined to be 2020 because it aligns with the baseline analysis year of the model used for the transportation analysis. The projects included in the 2020 baseline condition will result in implementation of various transportation network changes. These include travel-lane reductions, new bicycle lanes, safety projects, streetscape projects that have been recently implemented (e.g., Upper Market Street Safety Project, Safer Market Street Project, signal timing changes on Market and Mission streets, which were completed prior to 2018), transportation projects that have been approved and funded or are under construction (e.g., Van Ness Bus Rapid Transit/Van Ness Improvement Project, Polk Street Streetscape Project), and land use development projects that will most likely be completed by the 2020 baseline year (e.g., 1546–1564 Market Street Project, 1629 Market Street Project, 1699 Market Street Project, 1500 Mission Street Project, 150 Van Ness Avenue Project, and 22–24 Franklin Street Project).

Alternatives to the Projects

Chapter 5, Alternatives, of this EIR considers a reasonable range of alternatives that would reduce, avoid, or eliminate potential impacts of the Hub Plan, the two individual development projects, and the Hub HSD while still feasibly meeting most of the objectives of each. The three alternatives studied in this EIR for the Hub Plan and Hub HSD include the Hub Plan and Hub HSD No Project Alternative; Land Use Plan Only Alternative, which removes the streetscape and street network improvements from the project; and Hub Plan Reduced Intensity Hub Plan Alternative, which modifies sites that would be upzoned and lowers building heights on select sites. The two alternatives studied in this EIR for the 30 Van Ness Avenue Project are the 30 Van

Ness Avenue No Project Alternative and 30 Van Ness Avenue Reduced Intensity Alternative, which reduces the height and amount of development only at the 30 Van Ness Avenue project site. The two alternatives studied in this EIR for the 98 Franklin Street Project are the 98 Franklin Street No Project Alternative and the 98 Franklin Street Reduced Intensity Alternative, which also reduces the height and the amount of development only at the 98 Franklin Street project site.

Environmental Review of Subsequent Development Projects

CEQA Guidelines section 15168(c) states that subsequent activities in the program must be examined in light of the program EIR to determine whether an additional environmental document must be prepared. Thus, this EIR assumes that subsequent development projects in the Hub Plan area (with the exception of the streetscape and street network improvements, the 30 Van Ness Avenue Project, and the 98 Franklin Street Project) could be subject to further environmental review at the time subsequent specific projects are proposed. The analysis of subsequent development projects would be based on existing conditions at the site and vicinity, at such time a project is proposed, and would take into account any updated information relevant to the environmental analysis of the subsequent development projects (e.g., changes to the environmental setting or updated growth forecasts, models, etc.). Because this EIR analyzes the two individual development projects (30 Van Ness Avenue and 98 Franklin Street) and the streetscape and street network improvements at a project-level, no further environmental review of these projects is anticipated.

Subsequent development projects that meet the requirements of the Hub HSD would not be subject to further environmental review. However, qualifying projects would still be required to implement the applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing federal, state, and City laws and regulations.

Projects Consistent with the Development Density in the Hub Plan

California Public Resources Code section 21083.3 and CEQA Guidelines section 15183 mandate that projects that are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific effects that are peculiar to the project or its site. This streamlines the review of such projects and reduces the need to prepare repetitive environmental studies. Therefore, subsequent development projects in the Hub Plan area that are determined to be consistent with the development density established in the Hub Plan would be evaluated in accordance with CEQA Guidelines section 15183.

The lead agency, in most cases the department, is required to limit its evaluation of a project in accordance with section 15183. This evaluation would examine the environmental effects of the project that:

1. Are peculiar to the project or site on which the project is located;
2. Were not analyzed as significant effects in a prior EIR on the zoning action, general plan, or community plan, with which the project is consistent;
3. Are potentially significant offsite impacts and cumulative impacts that were not discussed in the prior EIR prepared for the general plan, community plan, or zoning action; or
4. Are previously identified significant effects that, as a result of substantial new information that was not known at the time the EIR was certified, are determined to be a more severe adverse impact than that discussed in the prior EIR.

Each subsequent development project consistent with the development density established in the Hub Plan would be evaluated to determine whether any of the criteria above have been met. This evaluation may include site- and project-specific studies (such as wind tunnel testing or shadow studies), which are appropriately analyzed at the time a specific project is proposed, when sufficient detail is available to enable such analysis. Section 15183(c) specifies that if an impact is not peculiar to the site or to the proposed project, then an EIR need not be prepared for that project solely on the basis of that impact. In the case that a subsequent development project in the Hub Plan area may have site-specific impacts not accounted for in this program EIR, a subsequent analysis in a mitigated negative declaration or focused EIR may be required, depending on whether that project would cause potentially significant impacts. If no such impacts are identified, the proposed project and applicable mitigation measures identified in this EIR would be exempt from further environmental review, in accordance with Public Resources Code section 21083.3 and CEQA Guidelines section 15183.

STREAMLINING FOR INFILL PROJECTS

California Public Resources Code section 21094.5 and CEQA Guidelines section 15183.3 provides a streamlined environmental review process for eligible infill projects by limiting the topics subject to review at the project level where the effects of infill development have been previously addressed in a planning-level decision[2] or by uniformly applicable development policies.[3] CEQA does not apply to the effects of an eligible infill project under two circumstances. First, if an effect

---

[2] Planning-level decision means the enactment of an amendment of a general plan or any general plan element, community plan, specific plan, or zoning code.

[3] Uniformly applicable development policies are policies or standards adopted or enacted by a city or county, or by a lead agency, to reduce one or more adverse environmental effects.

was addressed as a significant effect in a prior EIR[4] for a planning-level decision, then that effect need not be analyzed again for an individual infill project, even when that effect was not reduced to a less-than-significant level in the prior EIR. Second, an effect need not be analyzed if it was not analyzed in a prior EIR or is more significant than previously analyzed if the lead agency makes a finding that uniformly applicable development policies or standards adopted by the lead agency or a city or county apply to the infill project and would substantially mitigate that effect. Depending on the effects addressed in the prior EIR and the availability of uniformly applicable development policies or standards that apply to the eligible infill project, the streamlined environmental review would range from exemption from environmental review to a narrowed project-specific environmental document.

Pursuant to CEQA Guidelines section 15183.3, an eligible infill project is examined in light of the prior EIR to determine whether the infill project would cause any effects that require additional review under CEQA. The evaluation of an eligible infill project must demonstrate the following:

1. The project satisfies the performance standards of Appendix M of the CEQA Guidelines,
2. The degree to which the effects of the infill project were analyzed in the prior EIR,
3. An explanation of whether the infill project will cause new specific effects[5] not addressed in the prior EIR,
4. An explanation of whether substantial new information shows that the adverse effects of the infill project are substantially more severe than described in the prior EIR, and
5. If the infill project would cause new specific effects or more significant effects than disclosed in the prior EIR, the evaluation must indicate whether uniformly applied development standards would substantially mitigate[6] those effects.[7]

---

[4] Prior EIR means the EIR certified for a planning-level decision, as supplemented by any subsequent or supplemental EIRs, negative declarations, or addenda to those documents.

[5] A new specific effect is an effect that was not addressed in the prior EIR and that is specific to the infill project or the infill project site. A new specific effect may result if, for example, the prior EIR stated that sufficient site-specific information was not available to analyze the significance of that effect. Substantial changes in circumstances following certification of a prior EIR may also result in a new specific effect.

[6] More significant means an effect will be substantially more severe than described in the prior EIR. More significant effects include those that result from changes in circumstances or changes in the development assumptions underlying the prior EIR's analysis. An effect is also more significant if substantial new information shows that (1) mitigation measures that were previously rejected as infeasible are, in fact, feasible and such measures are not included in the project; (2) feasible mitigation measures considerably different than those previously analyzed could substantially reduce a significant effect described in the prior EIR but such measures are not included in the project; or (3) an applicable mitigation measure was adopted in connection with a planning level decision, but the lead agency determined that it is not feasible for the infill project to implement that measure.

[7] Substantially mitigate means that the policy or standard will substantially lessen the effect but not necessarily below the levels of significance.

No additional environmental review is required if the infill project would not cause any new site-specific or project-specific effects, or more significant effects, or if uniformly applied development standards would substantially mitigate such effects.

To be eligible for the streamlining procedures prescribed in section 15183.3, an infill project must meet all of the following criteria:

1. The project site must be on a site in an urban area that has been previously developed or adjoins existing qualified urban uses on at least 75 percent of the site's perimeter.[8]
2. The proposed project satisfies the performance standards provided in Appendix M of the CEQA Guidelines.
3. The proposed project is consistent with the general use designation, density, building intensity, and applicable policies specified in the Sustainable Communities Strategy or an alternative planning strategy.[9]

The Hub Plan area is located within the Market-Octavia/Upper Market Priority Development Area, as specified in *Plan Bay Area*, the applicable Sustainable Communities Strategy.[10]

Any amendments to the Hub Plan would be evaluated consistent with CEQA Guidelines section 15152, which states that the analysis of subsequent development projects could be "tiered" from a program EIR, relying on the program EIR to the extent that it has evaluated the effects, including cumulative effects, that would result from their development.

C. Organization of the Draft EIR

This Draft EIR has been organized as follows:

- **Summary.** This chapter summarizes the EIR by providing a concise overview of the Hub Plan, the two individual development projects, and the Hub HSD, including the project description and requisite approvals; the environmental impacts that would result;

8 For the purpose of this subdivision, "adjoin" means the infill project is immediately adjacent to qualified urban uses or is separated from such uses by only an improved public right-of-way. Qualified urban use means any residential, commercial, public institutional, transit or transportation passenger facility, or retail use or any combination of those uses.

9 Plan Bay Area is the current Sustainable Communities Strategy and Regional Transportation Plan that was adopted by the Metropolitan Transportation Commission and Association of Bay Area Governments in July 2017, in compliance with California's governing greenhouse gas reduction legislation, Senate Bill 375. Metropolitan Transportation Commission and Association of Bay Area Governments, Plan Bay Area 2040: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040: Final. July 26, 2017, *http://files.mtc.ca.gov/library/pub/30060.pdf*, accessed January 3, 2019.

10 Metropolitan Transportation Commission and Association of Bay Area Governments, *Plan Bay Area 2040: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040: Final*, July 26, 2017, *http://files.mtc.ca.gov/library/pub/30060.pdf*, accessed January 3, 2019.

mitigation measures identified to reduce or avoid the impacts; alternatives to the Hub Plan, the two individual development projects, and the Hub HSD; and areas of controversy and issues to be resolved.

- **Chapter 1, Introduction.** This chapter (above and the contents herein) includes a discussion of the environmental review process, the comments received on the scope of the EIR, the purpose of this EIR, the organization of the EIR, and opportunities for public participation in the environmental review process.
- **Chapter 2, Project Description.** This chapter discusses the project location, project objectives, and project components, including the physical characteristics of the Hub Plan, the two individual development projects, and the Hub HSD, such as changes to zoning and heights and the proposed streetscape and street network improvements.
- **Chapter 3, Environmental Setting, Impacts, and Mitigation Measures.**[11] This chapter describes the existing environmental setting and regulatory framework as well as the environmental and cumulative impacts of the Hub Plan, the two individual development projects, the streetscape and street network improvements, and the Hub HSD. Mitigation measures are identified where feasible to minimize the significant environmental effects of each project component. Each environmental topic is discussed in a separate section within this chapter.
- **Chapter 4, Other CEQA Considerations.** This chapter describes any growth inducement that would result from the Hub Plan, the two individual development projects, the streetscape and street network improvements, and the Hub HSD; recapitulates the significant environmental effects that cannot be mitigated to less-than-significant levels; identifies significant irreversible changes that would result if each of the project components is implemented; and presents areas of known controversy and issues left to be resolved.
- **Chapter 5, Alternatives.** This chapter presents alternatives to the Hub Plan, the two individual development projects, the streetscape and street network improvements, and the Hub HSD, including the Hub Plan and Hub HSD No Project Alternative, Land Use Plan Only Alternative, Hub Plan Reduced Intensity Hub Plan Alternative, 30 Van Ness Avenue No Project Alternative, 30 Van Ness Avenue Reduced Intensity Alternative, 98 Franklin Street No Project Alternative, and 98 Franklin Street Reduced Intensity Alternative.

[11] The environmental impacts of the topics in the Appendix G checklist are evaluated and scoped out in the initial study, which is in Appendix B.

- **Chapter 6, Report Preparers.** This chapter presents the persons involved in preparing this EIR.
- **Appendices.** Appendices include Appendix A, Notice of Preparation and Comments Received; Appendix B, Initial Study; Appendix C, Cultural Resources Supporting Information; Appendix D, Transportation Supporting Information; Appendix E, Noise Supporting Information; Appendix F, Air Quality Supporting Information; Appendix G, Wind Supporting Information; and Appendix H, Shadow Supporting Information.

D. PUBLIC PARTICIPATION

CEQA and chapter 31 of the San Francisco Administrative Code encourage public participation in the planning and environmental review processes. The City will provide opportunities for the public to present comments and concerns regarding the CEQA process for the Hub Plan, the two individual development projects, and the Hub HSD. The public is invited to provide comments and concerns regarding the accuracy of the Draft EIR and the CEQA process. The comment period and public hearing dates are indicated on the front cover of this EIR. Written comments may be submitted to the department, attention of Elizabeth White, at 1650 Mission Street, Suite 400, San Francisco, CA 94103, or emailed to CPC.HubPlanEIR@sfgov.org during the specified public review and comment period. Written and oral comments may be presented at the public hearing concerning the Hub Plan, the two individual development projects, and the Hub HSD.

Members of the public are not required to provide personal identifying information when they communicate with the commission or the department. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the department's website or in other public documents.

2. PROJECT DESCRIPTION

A. OVERVIEW

The San Francisco Planning Department (department) is proposing to rezone portions of an approximately 84-acre area of San Francisco within the boundaries of the Market and Octavia Area Plan in the Downtown/Civic Center, South of Market (SoMa), Western Addition, and Mission neighborhoods[1] and incorporate public realm improvements ("the Hub Plan"). The approximately 84-acre area is referred to as "the Hub." The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan.

The Hub area is an irregular area bounded by Haight Street from Octavia Boulevard to Gough Street, Gough Street from Haight Street to Page Street, Franklin Street from Page Street to Fell Street, Fell Street from Franklin Street to Van Ness Avenue, Van Ness Avenue from Fell Street to Hayes Street, Hayes Street from Van Ness Avenue to Larkin Street, Market Street from Ninth Street to 10th Street, midblock between 10th Street and 11th Street from Market Street to Mission Street, Mission Street from 10th Street to Washburn Street, a portion of Washburn Street, Minna Street from 10th Street to just past Lafayette Street (with certain lots excluded), midblock between Lafayette Street and 12th Street to Howard Street, Howard Street just north of 12th and 13th streets, and 13th Street to Octavia Boulevard and Haight Street, as shown in detail in **Figure 2-1.**

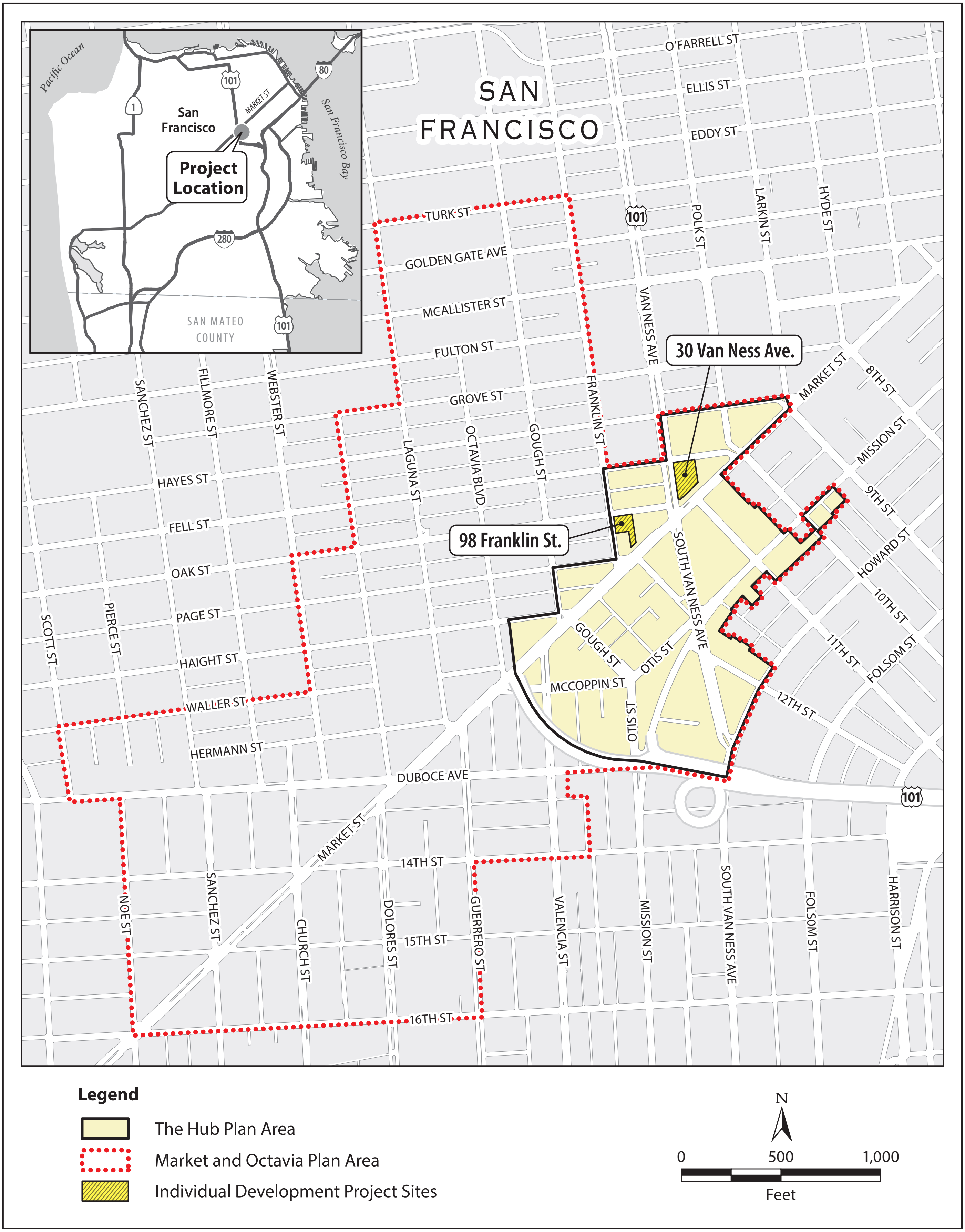
In 2016, the department initiated a planning process that looked at the area and identified opportunities to increase the amount of housing, including affordable housing, and coordinate public realm improvements better. The department identified sites in the Hub area for upzoning to increase permitted heights and additional rezoning to have more consistent land use controls across the area. The department has prepared this environmental impact report (EIR) in compliance with the California Environmental Quality Act (CEQA). This EIR analyzes the environmental effects of the Hub Plan.[2] [3]

---

[1] San Francisco Planning Department, Neighborhood Groups Map, *http://sf-planning.org/neighborhood-groups-map*, accessed January 8, 2018. This document (and all documents cited in this EIR unless otherwise noted) is available for review on the San Francisco Property Information Map, which can be accessed at *https://sfplanninggis.org/PIM/?*. Individual files can be viewed by clicking on the Planning Applications link, clicking on the "More Details" link under the project's environmental case number (2015-000940ENV, 2017-008051ENV or 2016-014802ENV), and clicking on the "Related Documents" link.

[2] Several proposals in the Hub Plan have been proposed independently. These have gone through or are currently going through a separate environmental review. The EIR studies the entirety of the proposed Hub Plan. Because the proposals are contained within the Hub Plan, the physical environmental effects of the proposals are addressed in this EIR.

[3] This EIR refers to the "Hub Plan," which is the same project as the "Market and Octavia Plan Amendment."



ICF Graphics ... 00700.17 (11-14-2018)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-1
Project Location

The area evaluated in this EIR is considered "the Hub Plan area." Of the sites proposed for upzoning, two individual development project sites within the Hub Plan area at 30 Van Ness Avenue and 98 Franklin Street are evaluated at a project-specific level in this EIR, meaning that no additional environmental review will be required for these projects following certification of the EIR, unless their project descriptions are revised in a way that would trigger supplemental or subsequent environmental review under CEQA. In addition, this EIR evaluates the designation of portions or all of the Hub Plan area as a Housing Sustainability District (HSD), in compliance with Assembly Bill 73 (Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11). This EIR serves as a program-level EIR for the zoning changes and, as noted above, a project-level EIR for the two development projects at 30 Van Ness Avenue and 98 Franklin Street and the streetscape and street network improvements. The proposed project at 30 Van Ness Avenue includes retention of portions of the existing 75-foot-tall, five-story building and construction of a 45-story building with ground-floor retail space, 11 floors of office space, and approximately 33 floors of residential space. The proposed project at 98 Franklin Street includes demolition of the existing 100-space surface vehicular parking lot and construction of a 31-story residential tower above a five-story podium that would be occupied by new high school facilities for the International High School (grades 9–12 of the French American International School [FAIS]).

The department has also determined that preparation of an initial study is appropriate to focus the scope of this EIR. The initial study is provided as part of this EIR in Appendix B.

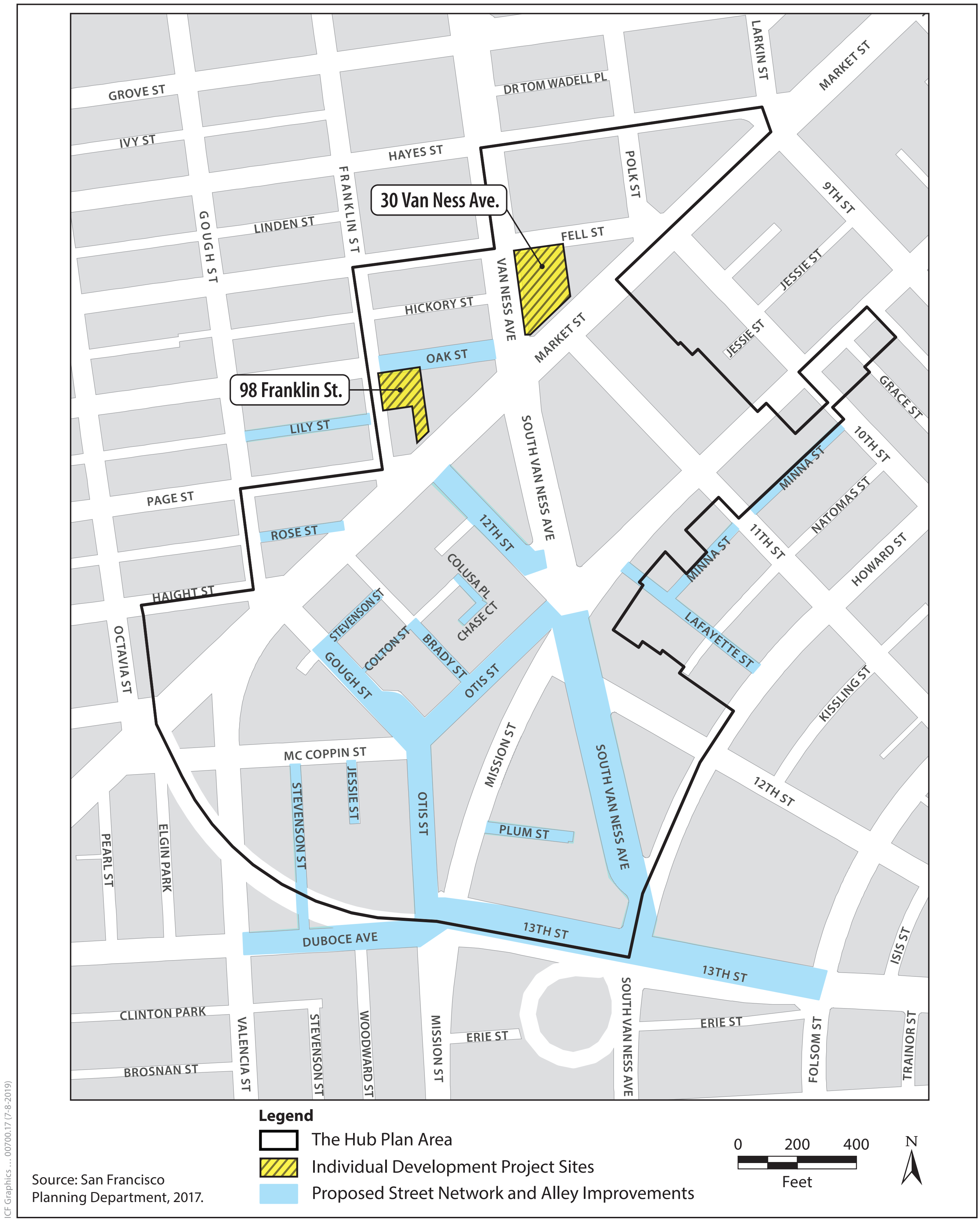
The project sponsor for the Hub Plan and the HSD is the San Francisco Planning Department. The project sponsor for the 30 Van Ness Avenue Project is 30 Van Ness Development, LLC, and the project sponsors for the 98 Franklin Street Project are the FAIS and 98 Franklin, LLC.

The boundaries of the Hub Plan area, HSD, the two individual projects studied, and the adjacent streets are shown in **Figure 2-2**. In addition to the streets in the Hub Plan area, the project includes several streets adjacent to the Hub Plan area, specifically, Lily Street between Gough Street and Franklin Street, Minna Street between 10th Street and Lafayette Street, Lafayette Street between Mission Street and Howard Street, 13th Street between Howard Street and Folsom Street, and Duboce Avenue between Valencia Street and Mission Street.

THE HUB PLAN

PLAN VISION

The objectives of the Hub Plan are to encourage housing, including affordable housing; create safer and more walkable streets, as well as welcoming and active public spaces; increase transportation options; and create a neighborhood with a range of uses and services to meet neighborhood needs. The Hub Plan would pursue this vision through changes to current



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-2
The Hub Plan Area Boundaries, Individual Development Project Site Locations, and Proposed Street Network and Alley Improvements

zoning controls applicable to the area so as to better meet plan objectives. This would include changes to height and bulk districts for select sites to allow more housing, including more affordable housing (see **Table 2-1**, p. 2-24). Modifications to land use zoning controls would also allow more flexibility for development of nonresidential uses, specifically, office, institutional, art, and public uses. New requirements for micro retail[4] would encourage a mix of retail sizes and uses and decrease off-street vehicular parking capacity within the Hub Plan area, a transit-rich location, by reducing the currently permitted off-street vehicular parking maximums.

The plan also calls for public realm improvements to streets and sidewalks within and adjacent to the Hub Plan area, such as sidewalk widening, streetlight upgrades, median realignment, road and vehicular parking reconfiguration, tree planting, elimination of one segment of a travel lane, and the addition of bulb-outs.

Background

From the 1880s through the 1950s, the area of San Francisco near the intersections of Market Street and Valencia, Haight, and Gough streets was a well-known and distinct neighborhood, called the "Market Street Hub," or simply "The Hub." The name was derived from the convergence of streetcar lines that carried people from outlying neighborhoods to downtown San Francisco. The area's distinctive block pattern, created by the meeting of the Mission, SoMa, and North of Market street grids, lends additional meaning to this historic name.

In the early 2000s, the Hub neighborhood was included within the boundaries of the Market and Octavia Area Plan,[5] adopted in 2008. In the Market and Octavia Area Plan, portions of the Hub that lie south of Market Street are characterized as "SoMa West" and envisioned as a "vibrant new mixed-use neighborhood." Numerous policies in the Market and Octavia Area Plan support this vision. The Market and Octavia Area Plan also created the Van Ness and Market Downtown Residential Special Use District (SUD). This SUD encourages the development of a transit-oriented, high-density, mixed-use residential neighborhood around the intersections of Market Street and Van Ness Avenue and Mission Street and Van Ness Avenue, with towers ranging from 250 to 400 feet in height and reduced vehicular parking.

Most of the planned housing in the 2008 Market and Octavia Area Plan for the Hub Plan area would have come from the development of relatively large sites. However, that vision has not yet materialized. These larger projects take longer to develop and, because of the 2007–2008 mortgage crisis and the Great Recession of 2007–2009, they generally did not receive much attention from developers following adoption of the Market and Octavia Area Plan. However, this area has received more attention from the development community in the strong economic cycle beginning in 2011 and continuing through the drafting of this document.

---

4 A micro retail unit is defined as retail space of 1,000 square feet or less.

5 San Francisco Planning Department, Market and Octavia Area Plan, May 30. 2008, *http://default.sfplanning.org/Citywide/Market_Octavia/Market_and_Octavia_Area_Plan_2010.pdf*, accessed January 3, 2018.

The Hub Plan area is also in the midst of major infrastructure improvements, such as the Van Ness Avenue Bus Rapid Transit (BRT),[6] that were identified in the Market and Octavia Area Plan and have since moved into construction. In light of these recent changes, the department has proposed to study the Hub portion of the Market and Octavia Area Plan on a programmatic level and consider plan amendments. The amendments, if adopted, would be codified within the Market and Octavia Area Plan.

The city's growth needs were identified through Plan Bay Area, the Bay Area's Sustainable Communities Strategy, developed jointly by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC).[7] Plan Bay Area focuses on ensuring an efficient transportation network, providing more housing choices, and promoting growth in a financially and environmentally responsible way, with the specific goal of reducing greenhouse gas (GHG) emissions. Plan Bay Area is a roadmap for meeting 80 percent of the region's future housing needs in areas identified by local governments as Priority Development Areas. Plan Bay Area estimates that approximately 92,000 additional housing units and 191,000 additional jobs will exist in San Francisco by 2040, which equates to roughly 15 percent of the total growth anticipated in the region. The projected additional housing represents a 25 percent increase in the city's housing inventory; the projected additional jobs represents a 34 percent increase in city employment levels over the 2012 baseline year. San Francisco has identified 12 Priority Development Areas that are expected to accommodate a substantial portion of this growth. Growth in these transit-rich and walkable Priority Development Areas is expected to reduce per capita GHG emissions.[8] The Hub Plan, which is within the Market-Octavia/Upper Market Priority Development Area, seeks to promote the construction of new housing, consistent with the goals of Plan Bay Area.

In March 2017, the department published the draft Market Street Hub Area Public Realm Plan (draft public realm plan).[9] The draft public realm plan recommended improvements to streets and alleys and identified four new open spaces that could be built in coordination with private development. Since publishing the draft public realm plan, some components of the draft plan have been incorporated into projects that have undergone or are undergoing CEQA compliance analysis and now included in the cumulative project list. Specifically, roadway improvements along 11th Street from Market Street to Bryant Street, Valencia Street from Market Street to

---

6 The San Francisco County Transportation Authority certified the Van Ness Avenue BRT EIR, State Clearinghouse No. 2007092059, on September 10, 2013. An Addendum to the Final Environmental Impact Report was approved on March 4, 2016, reflecting changes made to the project during final design.

7 Plan Bay Area was necessitated by the adoption of Senate Bill 375, which required regions to prepare a Sustainable Communities Strategy (or Alternative Planning Strategy) to reduce GHGs by linking growth to transit.

8 Plan Bay Area, Priority Development Area, and Transit Priority Area Map for CEQA Streamlining, 2018, *https://www.planbayarea.org/pda-tpa-map*, accessed March 8, 2018.

9 San Francisco Planning Department, *Market Street Hub Project Public Realm Plan Draft*, March 2017, *http://default.sfplanning.org/plans-and-programs/in-your-neighborhood/hub/Hub_Public_Realm_Plan_Final_Web.pdf*, accessed October 26, 2018.

15th Street, the portion of Stevenson Street off of 12th Street, and the four open spaces identified in the draft plan will be evaluated in other CEQA documents. **Figure 2-3** shows the proposed Hub Public Realm Plan versus the components studied in this EIR.

PLAN STRUCTURE

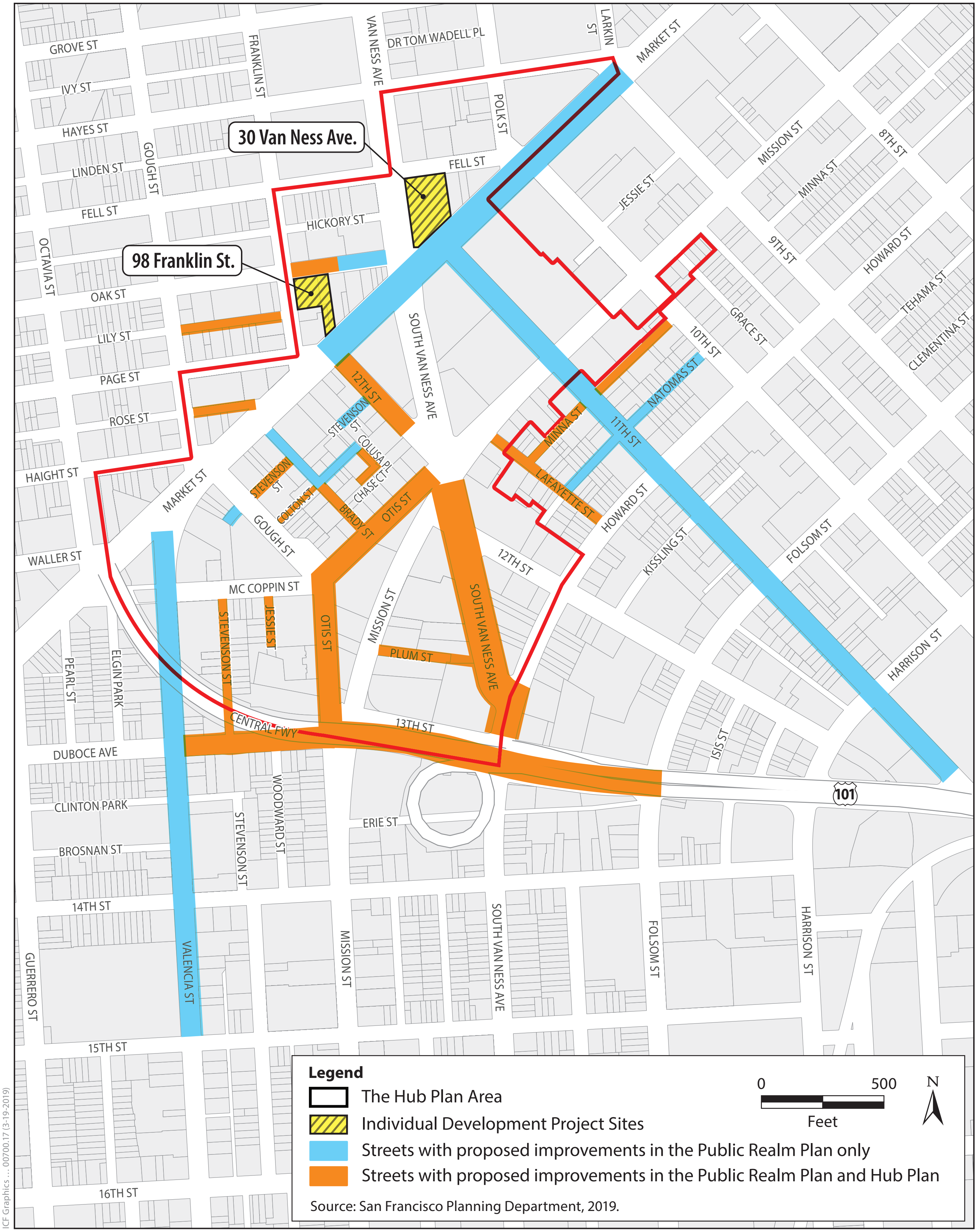
The Hub Plan defines neighborhood priorities and guides growth and development in the area. The Hub Plan also seeks to capitalize on current economic and development opportunities and analyze the potential for zoning and policy refinements that will better ensure that the area's growth supports the goals of the City and County of San Francisco (City) for housing, transportation, the public realm, and the arts. The proposed modifications to the zoning controls and policies allow for flexibility for future development.

INDIVIDUAL DEVELOPMENT PROJECTS

Two individual private development projects within the Hub Plan area are being evaluated in this EIR at a project-specific level. The proposed project at 30 Van Ness Avenue includes retention of portions of the existing 75-foot-tall, five-story building and construction of a 45-story building with ground-floor retail space, 11 floors of office space, and approximately 33 floors of residential space. The proposed project at 98 Franklin Street includes demolition of the existing 100-space surface vehicular parking lot and construction of a 31-story residential tower above a five-story podium that would be occupied by new high school facilities for the International High School (grades 9–12 of FAIS). In addition, the 98 Franklin Street Project proposes improvements to Lily Street between Gough and Franklin streets, including a midblock crossing on Lily Street between Franklin and Gough streets (to connect FAIS properties at 150 Oak Street, one block west of 98 Franklin Street), as well as improvements on the western portion of Oak Street between Van Ness Avenue and Franklin Street. These projects are discussed in more detail in Section 2.E, Characteristics of Individual Development Projects, below.

THE HUB HOUSING SUSTAINABILITY DISTRICT

This EIR evaluates the designation of portions or all of the Hub Plan area as an HSD, in accordance with Assembly Bill 73 (Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11). Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Designation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Qualifying projects would still be required to implement applicable



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-3
Street Network Changes Proposed in the Public Realm Plan and/or the Hub Plan

mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations. Projects that qualify under the provisions of the HSD would not be subject to further environmental review.

DENSITY BONUS PROGRAMS

The state density bonus law in California, adopted in 1978, allows developers to select concessions from local development standards if a certain percentage of affordable units is included in a project. In 2017, the City approved amendments to its local housing density bonus program, codified in Planning Code section 206, Affordable Housing Bonus Programs. Section 206 incorporates, among other programs, the 100 Percent Affordable Housing Bonus Program (Planning Code section 206.4, approved in 2016 as section 206.3), which allows up to three additional stories for fully affordable residential projects and establishes procedures for projects that seek approval under a state density bonus (Planning Code section 206.6). Both of these programs would be applicable to the Hub Plan area.[10]

The growth assumptions in this Draft EIR are derived from the overall citywide growth assumptions developed by the department, which are based on the regional planning effort underlying Plan Bay Area. The Plan Bay Area growth allocations for the city can be accommodated under existing height and bulk controls; therefore, existing zoning is not currently a constraint on growth or a determinant of the overall amount of housing growth expected citywide by 2040. It is assumed that increased residential development in the Hub Plan area due to the use of state or local density bonus programs and/or the Hub Plan's own height bonus will lead to a concomitant decrease in residential development elsewhere in San Francisco. Specifically, although the Hub Plan seeks to concentrate and focus a greater percentage of San Francisco's growth in the Hub Plan area, adoption of the Hub Plan in and of itself would not alter the overall growth forecast for San Francisco under Plan Bay Area.[11] Therefore, the Draft EIR adequately analyzes the growth that could occur pursuant to both the state density bonus program and the Hub Plan's own height bonus provision and the resulting effects related to, for example, transportation, air quality, and noise. Regarding other effects, such as wind or shadow effects, which are site specific, it would be speculative to analyze the future height and/or density on any given site when the specific sites where such a height or density bonus might be sought are unknown. Subsequent development projects in the Hub Plan area would undergo project-level CEQA review, as applicable, to

---

[10] Two other components of section 206, Housing Opportunities Mean Equity – San Francisco, or HOME-SF (section 206.3), and the analyzed state density bonus program (section 206.5), would not apply to the Hub Plan area because they are applicable only to use districts where residential density is regulated by lot size. In the Hub Plan area, residential density is regulated by building height and bulk controls, an approach generally known as "form-based zoning."

[11] When allocating the anticipated future regional growth that was assigned through the regional planning process to San Francisco, the department, as part of a forecasting exercise for a plan area, such as the Hub Plan area, maintains cumulative totals that are consistent with the regional plan and inclusive of whatever proposed zoning changes are being analyzed.

determine whether they would create significant environmental effects that were not disclosed in this Draft EIR as a result of the additional height increases or bulk modifications permitted under the state density bonus law.

B. PROJECT OBJECTIVES

This Draft EIR presents a statement of objectives sought by the proposed projects. Objectives define the projects' intent, explain the projects' underlying purpose, and facilitate the formation of project alternatives.

THE HUB PLAN AND HOUSING SUSTAINABILITY DISTRICT

In this Draft EIR, the Hub Plan's six primary goals are used as the project objectives. The six goals are:

- Create a vibrant mixed-use neighborhood.
- Maintain a strong preference for housing as a desired use.
- Encourage residential towers on selected sites.
- Establish a functional, attractive, and well-integrated system of public streets and open spaces.
- Reconfigure major streets and intersections to make them safer for people walking, bicycling, and driving.
- Take advantage of opportunities to create public spaces.

In addition, the project objectives for the Hub HSD are:

- To allow for ministerial approval of housing projects in the Hub Plan area.
- To streamline environmental review of housing projects in the Hub Plan area.

PROJECT-SPECIFIC OBJECTIVES

30 VAN NESS AVENUE PROJECT

The project sponsor for the 30 Van Ness Avenue Project has identified the following proposed project objectives:

- Create a high-density, mixed-use development that takes advantage of a prominent downtown location along routes for people riding public transit, people walking, and people bicycling by providing a range of residential unit types, office space, and neighborhood-serving retail.
- Contribute to implementation of the city's general plan housing element goals for affordable housing by constructing a high-density, mixed-use project, including sufficient office use, which would support the creation of affordable units.

- Transform the intersection of Market Street and Van Ness Avenue by creating an engaging and vibrant street level that offers a mix of retail uses that enlivens the area through a mix of day and nighttime uses within the project site.
- Develop an underused site, connecting the Civic Center, Mid-Market, and Hayes Valley neighborhoods.
- Create a modern, creative, functional workplace environment that attracts office tenants and a residential tower design that maximizes views for residents.
- Provide adequate vehicular parking and vehicular and (commercial and passenger) loading access to serve the needs of the project and its visitors.

98 Franklin Street Project

The project sponsor for the school component of the 98 Franklin Street development has identified the following proposed project objectives:

- Develop a new high school building for International High School (grades 9–12 of FAIS) in proximity to FAIS's other campus buildings near the intersection of Franklin and Oak streets in San Francisco's Downtown/Civic Center neighborhood and in proximity to public transportation facilities.
- Replace an underutilized site with a vibrant mixed-use development, including an educational institution of long standing in the city.
- Leverage the value of the 98 Franklin Street property by partnering with a residential developer to build housing in the air space above the school.
- Develop a project that enhances the larger community and generally conforms to the objectives and policies of the Hub Plan.

The project sponsor for the residential component of the 98 Franklin Street development has identified the following proposed project objectives:

- Assist FAIS's efforts to develop a new building for the International High School on the lower five floors of the proposed building.
- Increase the supply of housing near the Van Ness Avenue and Market Street intersection.
- Construct a substantial number of dwelling units to contribute to implementation of the City's general plan housing element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for the city.
- Create a mixed-use project that is generally consistent with the land use, housing, open space, and other objectives and policies of the Hub Plan.

C. PROJECT LOCATIONS

THE HUB PLAN AND HOUSING SUSTAINABILITY DISTRICT

The Hub Plan area, which is irregular in shape, is described in Section 2.A, above. The regional location and project boundaries are shown in **Figure 2-1,** p. 2-2, and **Figure 2-2**, p. 2-4. Altogether, the Hub Plan area comprises approximately 84 acres, which are spread across various city neighborhoods, such as the Downtown/Civic Center, SoMa, Western Addition, and Mission neighborhoods.[12] The Hub Plan area is encompassed entirely within the boundaries of the Market and Octavia Area Plan, a fully urbanized area with mixed uses. In addition to the streets in the Hub Plan area, the project includes several adjacent streets, specifically, Lily Street between Gough Street and Franklin Street, Minna Street between 10th Street and Lafayette Street, Lafayette Street between Mission Street and Howard Street, 13th Street between Howard Street and Folsom Street, and Duboce Avenue between Valencia Street and Mission Street. The Hub HSD would be designated within all or portions of the Hub Plan area.

The area is characterized by an overhead freeway structure (the Central Freeway, with 13th Street beneath), various freeway entrance and exit ramps, a wide variety of land uses, considerable housing, and many new residential developments, either going through the entitlement process or under construction.[13] Current land uses in the Hub Plan area include housing, in a mix of older and newer residential buildings; office uses; industrial spaces; commercial uses, such as gas stations; retail spaces; and some cultural and social institutions. Light industrial and mixed-use buildings tend to be on major streets, while residential units are on local streets. The heights of the buildings in the Hub Plan area vary, with most being low- to mid-rise buildings.

A high volume of vehicular traffic, much of it freeway bound, is present on area streets, in particular South Van Ness Avenue, Mission Street, Duboce Avenue, and 13th Street. These streets have large areas of asphalt, islands for people walking, and high injury rates.[14] Many streets do not include amenities for people walking (e.g., lighting, street trees). Several intersections in the area pose risks to people walking, bicycling, and driving, including those

---

12 San Francisco Planning Department, Neighborhood Groups Map, *http://sf-planning.org/neighborhood-groups-map*, accessed January 8, 2018.

13 Much of this development was authorized by the Market and Octavia Area Plan. See San Francisco Planning Department, *Market and Octavia Area Plan*, May 30, 2008, *http://default.sfplanning.org/Citywide/Market_Octavia/Market_and_Octavia_Area_Plan_2010.pdf*, accessed January 3, 2018.

14 San Francisco Vision Zero, *Vision Zero High Injury Network: 2017*, http://visionzerosf.org/maps-data/accessed November 2, 2018.

at Market and Gough streets as well as South Van Ness Avenue and Mission Street.[15] Elevations across the Hub Plan area range from 25 to 100 to feet above mean sea level.[16]

PUBLIC TRANSIT

There are numerous public transit routes within and surrounding the Hub Plan area. The San Francisco Municipal Railway (Muni) J-Church, K-Ingleside, L-Taraval, M-Ocean View, N-Judah, and T-Third Street light-rail lines operate beneath Market Street and connect downtown with the rest of the city. The Muni light-rail stop at Van Ness Avenue and Market Street is located in the middle of the Hub Plan area. Between 1 a.m. and 5 a.m. on weekends, the Owl routes for the K-Ingleside, L-Taraval, M-Ocean View, N-Judah, and T-Third Street light-rail lines also stop aboveground at the Market Street and Van Ness Avenue intersection. The J-Church, K-Ingleside, L-Taraval, M-Ocean View, T-Third, and N-Judah Muni lines provide connections to regional transit providers that serve the North Bay, the Peninsula, East Bay, San Francisco International Airport, and Oakland International Airport, including Golden Gate Transit (North Bay) buses, the Blue & Gold Fleet (North Bay), water ferries, and Water Emergency Transportation Authority (East Bay and Peninsula) ferries. Access to regional transit services is also provided by Muni bus routes 6-Haight/Parnassus, 7-Haight/Noriega, 9-San Bruno, 14-Mission, 19-Polk, 21-Hayes, 47-Van Ness, and 49-Van Ness/Mission, with express service provided by Muni's 7X-Noriega Express. Rapid routes that provide service to the Hub Plan area include Muni's 9R-San Bruno Rapid and 14R-Mission Rapid. The F-line's historic streetcar provides service through the Hub Plan area along Market Street.[17,18] The Salesforce Transit Center is located approximately 1.3 miles east of the Hub Plan area, and the future Central Subway would be located approximately 0.8 mile to the east.

Direct regional transit access to and from the northern portion of the Peninsula and the East Bay is provided by Bay Area Rapid Transit (BART), located approximately 0.25 mile east of the Hub Plan area at the Civic Center BART station on Market Street, between Seventh and Eighth streets, and approximately 0.3 mile south of the Hub Plan area at 16th and Mission streets. Direct regional access to the rest of the Peninsula and South Bay is provided by Caltrain, with its terminal station located at King and Fourth streets, approximately 2 miles southeast of the Hub Plan area. Direct regional access to the rest of the Peninsula and South Bay is provided by Caltrain, with its

---

15 San Francisco Vision Zero, *Vision Zero High Injury Network: 2017,* http://visionzerosf.org/maps-data/accessed November 2, 2018.

16 ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018.

17 San Francisco Municipal Transportation Agency, *Muni Map,* July 2017, *https://www.sfmta.com/sites/default/ files/sfmta-webmap-august2017-j2kl.pdf*, accessed January 8, 2018.

18 San Francisco Municipal Transportation Agency, *Muni Routes and Stops*, 2018, *https://www.sfmta.com/getting-around/muni/routes-stops,* accessed January 8, 2018.

terminal station located at King and Fourth streets, approximately 2 miles southeast of the Hub Plan area.

INDIVIDUAL DEVELOPMENT PROJECTS

30 VAN NESS AVENUE PROJECT

The site for the 30 Van Ness Avenue Project encompasses an approximately 38,100-square-foot lot on Assessor's Block 0835/Lot 004. It is fully developed with an approximately 75-foot-tall, five-story building that includes a variety of office and retail uses, City government offices, an optometrist office, a café, and a retail and pharmacy use doing business as Walgreens. There is currently approximately 180,330 square feet of general office space, including 15,850 square feet for vehicular parking, 12,790 square feet of pharmacy use, and 1,050 square feet of restaurant use. As shown in **Figure 2-2**, p. 2-4, the project site is trapezoidal and bounded by 164 feet of frontage on Fell Street to the north, 39 Fell Street and 1446 Market Street buildings to the east (Assessor's Block 0835/Lot 003), 197 feet of frontage on Market Street to the south, and 275 feet of frontage on Van Ness Avenue to the west. The entire project site is covered with impervious hardscape; the topography (at approximately 45 feet above sea level) slopes down slightly from Van Ness Avenue and Fell Street toward Van Ness Avenue and Market Street.

The project site at 30 Van Ness Avenue is in the Downtown/Civic Center neighborhood, within the Downtown General Commercial (C-3-G) zoning district and the Van Ness and Market Downtown Residential SUD. The first two stories of the building were constructed in 1908; the remaining three stories were built in 1964. There are approximately 42 ground-floor vehicular parking spaces in the building, which are accessed via a curb cut from Fell Street and reserved for office tenants. Passenger and commercial loading is available along a yellow curb on Van Ness Avenue. Sidewalks are present on all sides of all streets surrounding the project site. The main entrance for people walking to the office lobby is on Van Ness Avenue. The optometrist office and café also have access for people walking off of Van Ness Avenue. There is an entrance to the Walgreens on the corner of Van Ness Avenue and Market Street. In addition to ground-floor retail entrances, there are five other secondary entrances for people walking along Van Ness Avenue, four on Fell Street and three on Market Street. There are approximately 670 office employees and approximately 40 retail employees within the existing building. There are currently five street trees along the building's Van Ness Avenue frontage and four along the Market Street frontage; there are no trees along the Fell Street frontage.

Surrounding Uses

The project site at 30 Van Ness Avenue is surrounded by residential, commercial, and office uses. North of the project site, at Van Ness Avenue and Fell Street, a commercial high-rise building (100 Van Ness) was recently renovated and converted into a mixed-use building with ground-floor retail and residential uses on the floors above. East of the project site, there are two- to four-story buildings with commercial and residential uses. South of the project site, on the south side of Market Street, taller commercial and office buildings include Bank of America, San Francisco Municipal Transportation Agency (MTA), Square informational technology service, and Uber Technologies. West of the project, on Van Ness Avenue, is an office building that includes City offices and the New Conservatory Theater Center in the basement and a separate mixed-use building with ground-floor retail and residential uses on the floors above.

98 Franklin Street Project

The site for the 98 Franklin Street Project encompasses an approximately 23,750-square-foot area on Assessor's Block 0836/Lots 008, 009, and 013. The project site at 98 Franklin Street is currently a surface vehicular parking lot with 100 off-street vehicular parking spaces. **Figure 2-2**, p. 2-4, illustrates the location of the 98 Franklin Street Project. It is an L-shaped site at the corner of Franklin and Oak streets and bounded by approximately 142 feet of frontage on Oak Street to the north, the 1546–1564 Market Street building (Assessor's Block 0836/Lot 007) to the east, approximately 54 feet of frontage on Market Street to the south, and approximately 125 feet of frontage on Franklin Street to the west. The entire project site is paved; the topography of the site is relatively flat.

The project site at 98 Franklin Street is in the Downtown/Civic Center neighborhood. The block on which the project site is located is within the Downtown General Commercial (C-3-G) zoning district. In addition, the project site borders a Neighborhood Commercial Transit (NCT-3) zoning district and the Van Ness and Market Downtown Residential SUD. Vehicular parking for the project site is accessed via a 25-foot curb cut/driveway on Franklin Street and three 15-foot curb cuts along Oak Street. There are commercial and passenger loading spaces (and one on-street blue curb/Americans with Disabilities Act–compliant space) west of 20 Franklin Street, which is approximately 50 feet south of the site. Sidewalks are present on all sides of all streets surrounding the project site. Access for people walking is from the sidewalk on both Franklin and Oak streets. The parking lot use at 98 Franklin Street currently employs approximately two people.

There is no vegetation on the project site, but there are two street trees along the sidewalk on Franklin Street, one street tree along the sidewalk on Oak Street, and one street tree along the sidewalk on Market Street.

SURROUNDING USES

The site for the 98 Franklin Street Project is a surface parking lot, which is adjacent to sites that are currently under construction with residential uses and ground-floor retail. Immediately to the east is 1546–1564 Market Street, which, as of spring 2019, had a 12-story, 110-unit residential mixed-use building under construction (2012.0877E). Immediately south of 98 Franklin Street is a site at 22–24 Franklin Street where an eight-story mixed-use building is under construction. North of the site, across Oak Street, lies the six-story San Francisco Conservatory of Music and a surface vehicular parking lot. West of the site, across Franklin Street, lies a three-story residential and commercial building. Across the intersection of Franklin and Oak streets, which is northwest of the site, is the International High School of FAIS.

D. THE HUB PLAN COMPONENTS

PROGRAMMATIC AND PROJECT-SPECIFIC LEVELS OF ENVIRONMENTAL REVIEW

This section describes the Hub Plan analyzed in this Draft EIR. This Draft EIR analyzes potential physical environmental impacts that may occur if the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street are implemented. This Draft EIR contains both analysis at a "program" level, pursuant to CEQA Guidelines section 15168 for adoption and implementation of the plan, and a "project" level for streetscape and street network improvements as well as the two individual development projects, pursuant to CEQA Guidelines section 15161. A programmatic analysis is appropriate for a project that will involve a series of actions that are (1) related geographically, (2) logical parts in a chain of contemplated actions, (3) connected as part of a continuing program, and (4) carried out under the same authorizing statute or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines section 15168).

The evaluation of the Hub Plan in the Draft EIR is programmatic. Its assessment of potential environmental impacts is based on the various plan components that are required for its implementation and would facilitate its goals and objectives. CEQA Guidelines section 15168 notes that the use of a programmatic analysis "ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis; avoids duplicative reconsideration of basic policy considerations; allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time, when the agency has greater flexibility to deal with basic problems or cumulative impacts; and allows for a reduction in paperwork." When a programmatic EIR is completed, additional environmental review may be warranted in the future as later activities that fall within the program are proposed, as needed. With the exception of projects that seek ministerial approval pursuant to the Hub Plan's HSD, subsequent developments that arise from the Hub Plan would be required to undergo project-specific CEQA analysis. The environmental review would disclose impacts particular to a specific project or project site that were not known and, therefore, could not be evaluated as part of this EIR.

In addition to that programmatic review of the Hub Plan, this Draft EIR evaluates two individual development projects within the Hub Plan area (i.e., the 30 Van Ness Avenue Project and 98 Franklin Street Project) at a project-specific level. Likewise, the Draft EIR studies the streetscape and street network improvements proposed by the Hub Plan at the project level because of the sufficiency of detailed information available. The two individual development projects and the streetscape and street network improvements proposed by the Hub Plan and analyzed at the project level will be fully studied under CEQA, allowing for project approval following certification of the EIR.

Last, this Draft EIR evaluates the designation of portions or all of the Hub Plan area as an HSD, in accordance with Assembly Bill 73. Designation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations but would not require additional CEQA analysis.

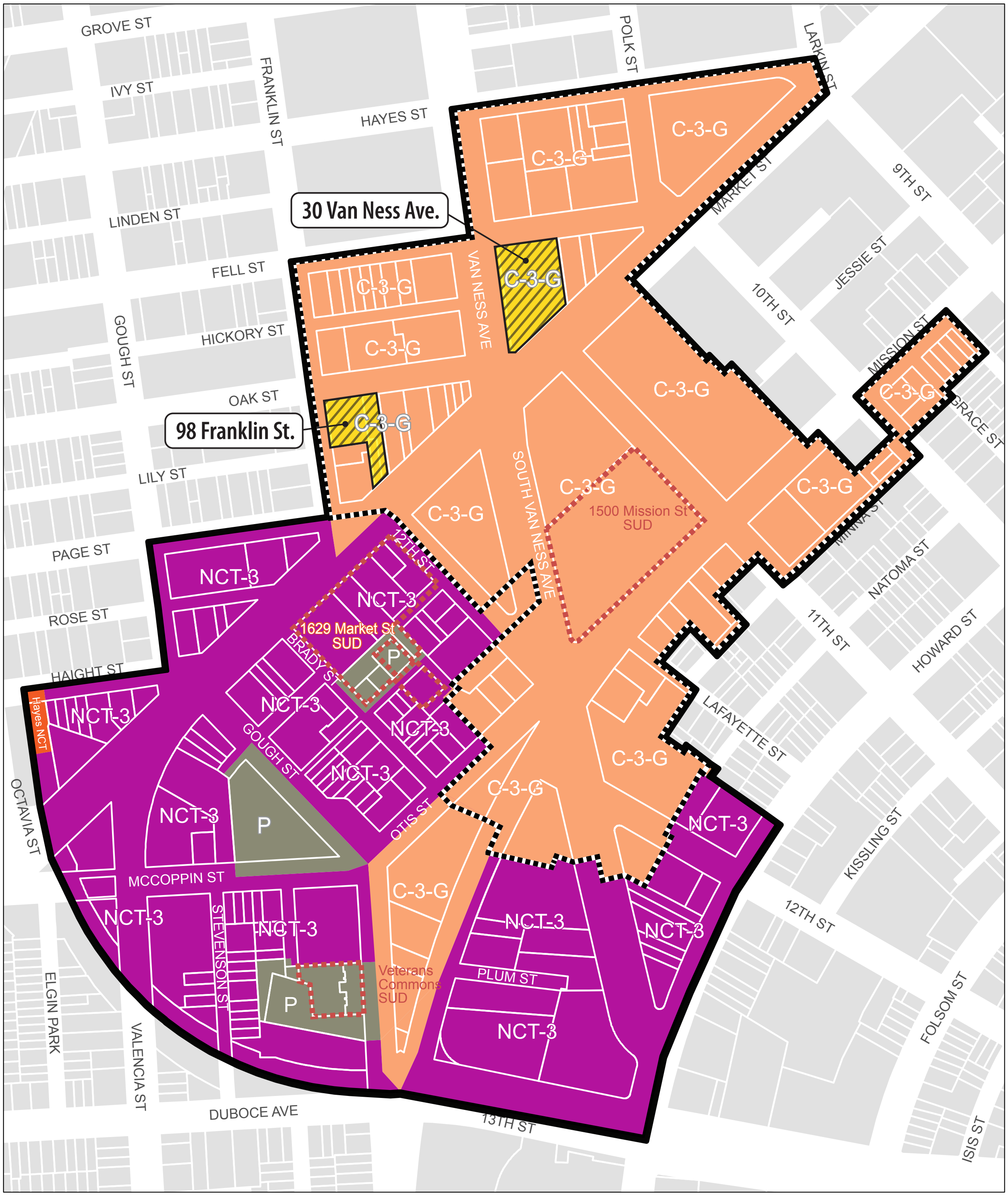
Land use (Zoning) Changes

Consistent with its goal to increase the capacity for housing, the Hub Plan includes the objective of increasing the area where housing is permitted. The existing zoning in the Hub Plan Area is shown in **Figure 2-4**. There are four existing zoning districts in the Hub Plan area: Neighborhood Commercial Transit (NCT-3), Downtown General Commercial (C-3-G), Hayes Neighborhood Commercial Transit (Hayes NCT), and Public (P).

The Neighborhood Commercial Transit (NCT-3) zoning district is a transit-oriented, moderate- to high-density mixed-use neighborhood of varying scale concentrated near transit services. The zoning district supports neighborhood-serving commercial uses on lower floors and housing above.

The Downtown General Commercial (C-3-G) zoning district, which covers the western portions of downtown, allows for a variety of uses, such as retail uses, offices, hotels, entertainment venues, clubs, institutions, and high-density residential. Many of these uses have a citywide or regional function, although the intensity of development is lower than in the downtown core area. In the vicinity of Market Street, the configuration of this district reflects easy accessibility by rapid transit.

The Hayes Neighborhood Commercial Transit (Hayes NCT) zoning district is less than 1 mile from the Civic Center. This mixed-use commercial district contains a limited range of retail commercial activity, which primarily caters to the immediate need of the neighborhood.



Zoning Codes

- C-3-G Downtown General Commercial
- NCT-3 Neighborhood Commercial Transit
- P Public
- Hayes NCT Hayes Neighborhood Commercial Transit

Legend

- The Hub Plan Area
- Individual Development Project Sites
- Van Ness & Market Downtown Residential Special Use District
- Special Use District

N

0 200 400 600

Feet

Source: San Francisco Planning Department, 2019.

ICF Graphics ... 00700.17 (4-8-2019)

Figure 2-4
Existing Hub Plan Area Zoning Districts

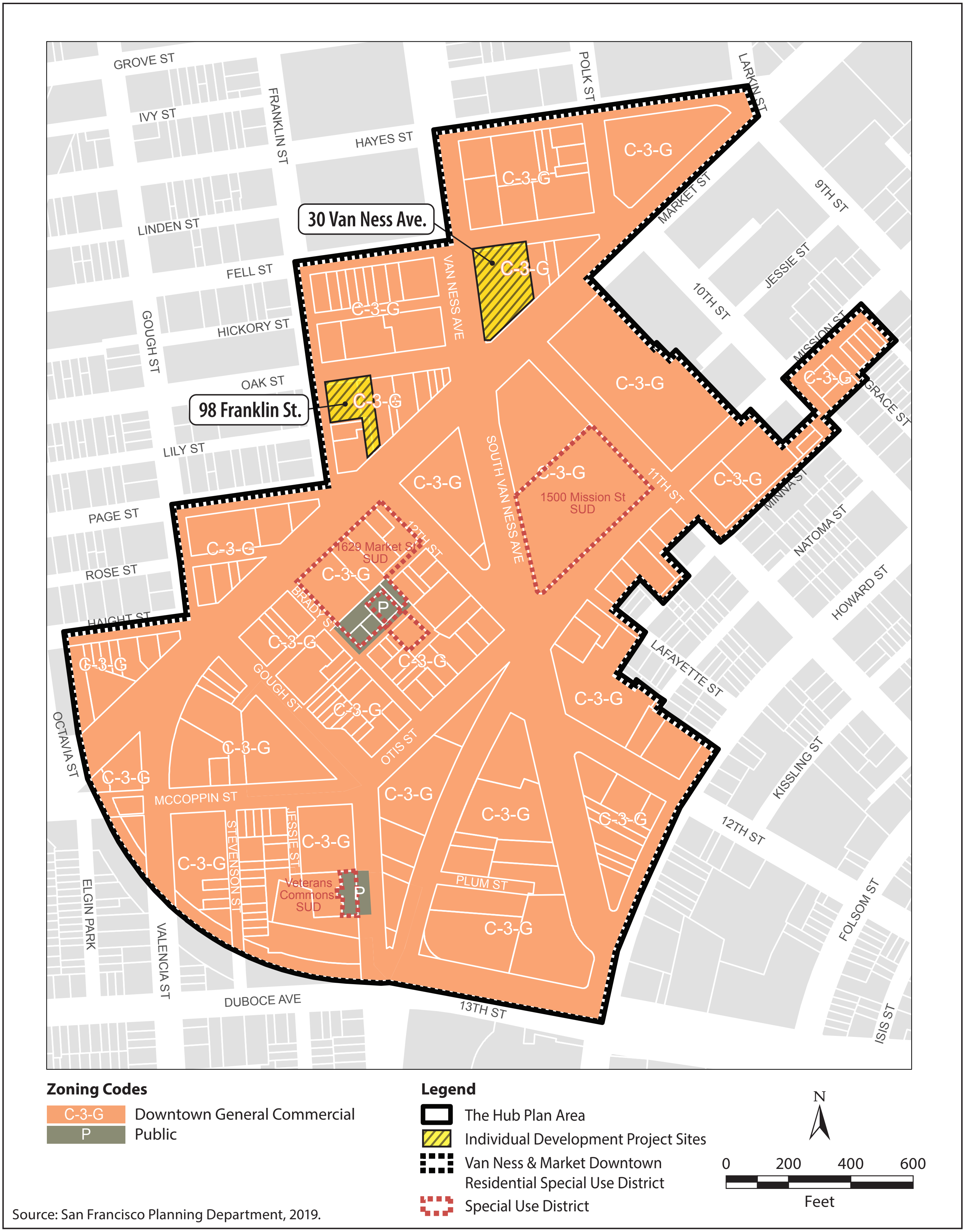
Public (P) zoning districts include land that is owned by a governmental agency and in some form of public use. This district may contain uses in conformity with the general plan and may include public structures, parks, open space, and plazas.

The majority of sites that are zoned Downtown General Commercial (C-3-G) – which primarily cover the northern portion of the Hub Plan area – are also within the Van Ness and Market Downtown Residential SUD. The Market and Octavia Area Plan created this SUD to emphasize residential uses. Nonresidential uses within this SUD are currently not permitted above the fourth floor, and there must be 2 square feet of residential uses for every 1 square foot of nonresidential land use (i.e., a 2:1 ratio). The current zoning allows for a range of residential uses as well as commercial uses on the ground floor.

Proposed zoning for the Hub Plan area is shown in **Figure 2-5**. Under the proposed zoning, there would be two zoning districts, Downtown General Commercial (C-3-G) and Public (P), and the Van Ness and Market Downtown Residential SUD would be expanded to encompass the entire Hub Plan area. A portion of the Veterans Commons SUD would be changed to the Van Ness and Market Downtown Residential SUD. All sites in the Hub Plan area would continue to be zoned for residential and active commercial uses on the ground floor. In addition, the existing prohibition on certain nonresidential uses above the fourth floor would be eliminated. Further, the SUD residential-to-nonresidential ratio would increase to 3 square feet of residential use for every 1 square foot of nonresidential land use (i.e., a 3:1 ratio), with arts, institutional, replacement office, and public uses exempt from this requirement.

Off-street vehicular parking is currently not required for projects proposed within the Hub Plan area. Moreover, the interim controls adopted for 18 months in December 2017 impose a maximum of 0.25 vehicular parking space per dwelling unit; however, projects with 25 percent onsite affordable housing may seek a conditional use authorization for up to 0.50 vehicular parking space per dwelling unit. Under the proposed Hub Plan, these controls would be made permanent, excluding the conditional use authorization option. Thereby, under the Hub Plan, 0.25 vehicular parking space per dwelling unit would be the maximum allowed for residential uses, with no conditional use authorization option. For nonresidential uses, the vehicular parking space ratio would be the same as it currently exists in the planning code, which is based on square footage.

The proposed zoning changes in the Hub Plan area would result in more cohesive zoning in the Hub area. These changes would allow for more flexibility and a wider variety of nonresidential uses allowed while increasing the residential capacity of the area and facilitating application of consistent zoning controls and impact fees across the Hub Plan area. For parcels in the Hub Plan area without proposed height and bulk limit changes, Hub Plan zoning changes are not expected to encourage more intensive development than already allowed under existing zoning controls. See the following section for the discussion of the proposed changes to the height and bulk limits.



Source: San Francisco Planning Department, 2019.

Figure 2-5
Proposed Hub Plan Area Zoning Districts

New development resulting from proposed zoning changes in the Hub Plan area (specifically the height and bulk changes) would generate increased revenues from impact and other development fees. Funding priorities and the spending plan for fee-funded public benefits would follow the existing structure for funding allocation established through the Market and Octavia Community Improvements Fund and the Van Ness and Market Neighborhood Infrastructure Fund.

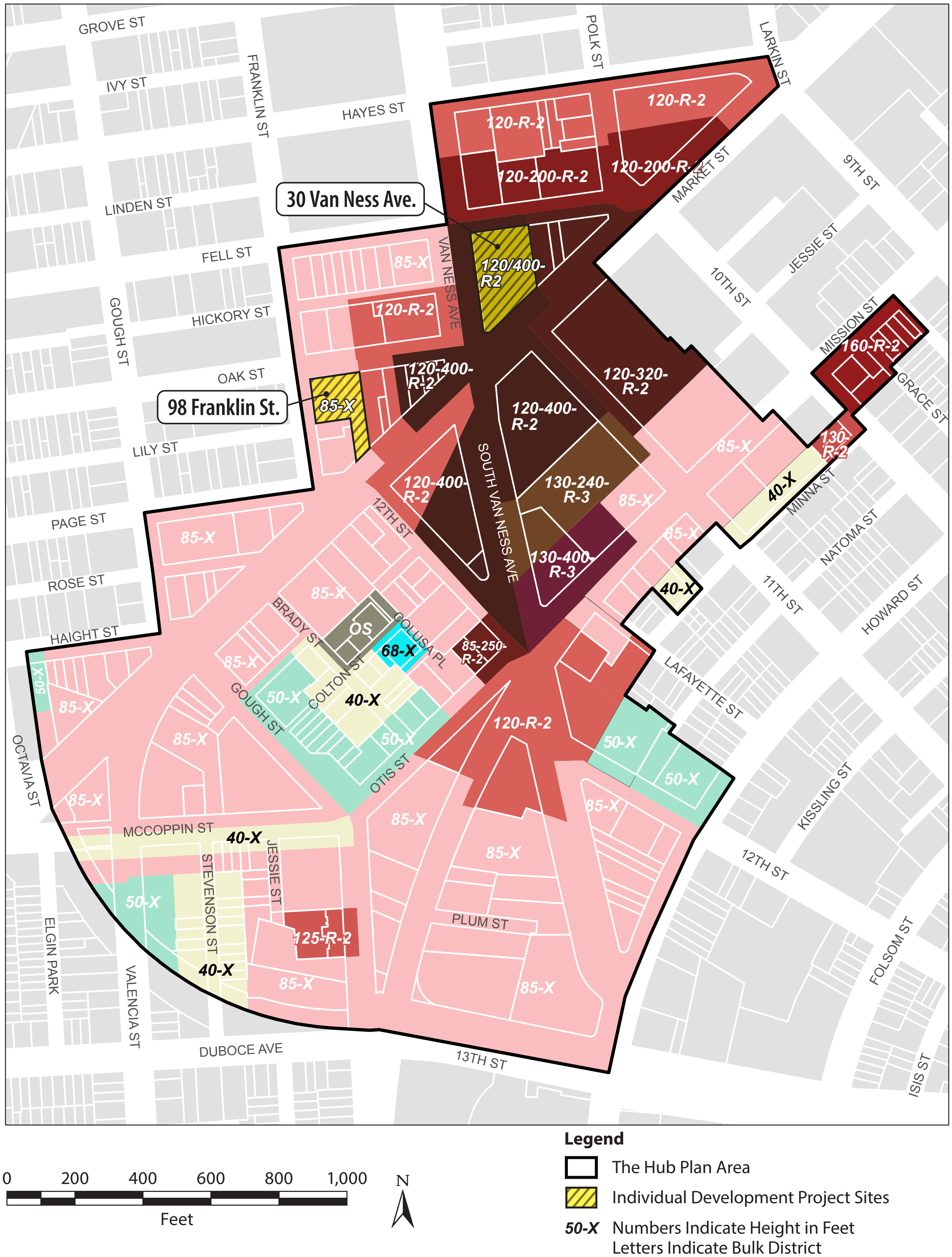
The Hub Plan would also include policies and requirements, such as a Driveway and Loading Operations Plan (DLOP), that would accommodate anticipated residential growth. The Hub Plan would require development projects of more than 100,000 net new gross square feet in the Hub Plan area to prepare a DLOP. The purpose of a DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight loading activities, and people walking, people bicycling, and vehicles to maximize reliance on onsite loading spaces, accommodate new loading demand, and ensure that offsite loading activity is considered in the design of new buildings. Applicable projects shall prepare a DLOP in accordance with any guidelines issued by the department. The DLOP will be reviewed and approved by the department, in consultation with the MTA.

Changes to Height and Bulk Limits

Under current zoning, much of the Hub Plan area is zoned for a height limit of 85 feet, with the exception of two major intersections at Market Street and Van Ness Avenue and Mission Street and South Van Ness Avenue, which allow towers from 250 to 400 feet. Buildings throughout the Hub Plan area generally range from two to six stories, with some notable exceptions at Market Street and Van Ness Avenue where buildings are substantially taller, with the 100 Van Ness Avenue building at 29 stories (400 feet) and the 1455 Market Street building at 23 stories (315 feet).

The Hub Plan seeks to increase the space available for housing through changes to the planning code and zoning map so as to allow the development of a taller, larger, denser, and more diverse array of buildings and heights on select parcels within the Hub Plan area. Existing height and bulk limits, which are contained in the planning code and zoning maps, are shown in **Figure 2-6**, and proposed height and bulk limits are shown in **Figure 2-7**, p. 2-23.

The proposed zoning under the Hub Plan would allow for additional height at the two major intersections noted above, with proposed maximum height limits ranging from 250 to up to 650 feet at these intersections. This proposed zoning would also increase maximum height limits at other select sites throughout the Hub Plan area. Specific changes to height limits under the Hub Plan are shown in **Table 2-1**, p. 2-24. If all of these sites were to be developed to the proposed maximum height limit, the changes would result in approximately 8,100 new residential units (approximately 15,700 new residents) compared with existing conditions. This estimate also assumes an extra 15 percent increase in the number of proposed units to account for potential density bonuses allowed by either state or local regulations.



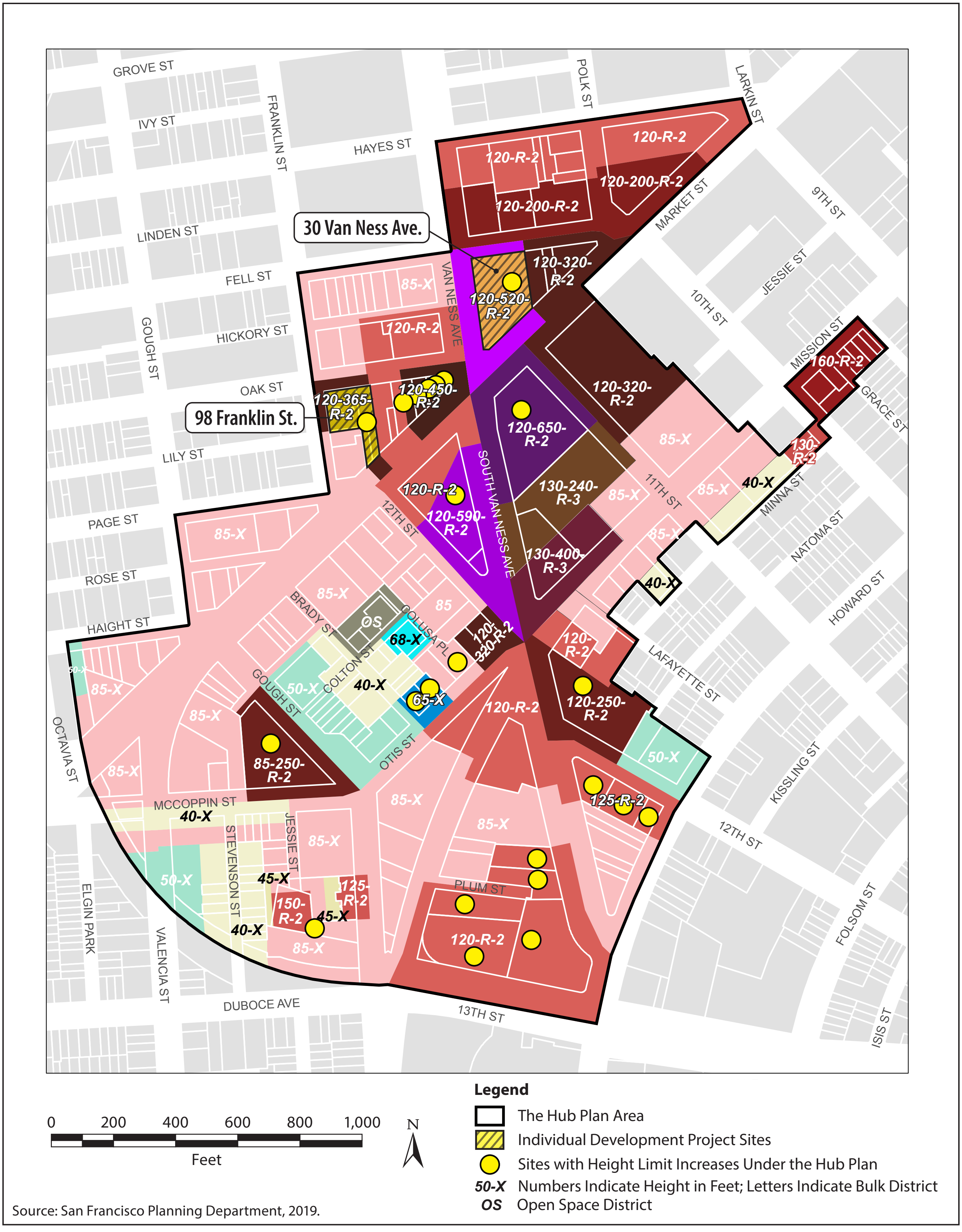
Source: San Francisco Planning Department, 2019.

ICF Graphics ... 00700.17 (1-7-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-6
Existing Hub Plan Area Height and Bulk Districts



Source: San Francisco Planning Department, 2019.

Figure 2-7
Proposed Hub Plan Area Height and Bulk Districts

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
30 Van Ness Avenue	Office, ground-floor retail	38,123	75	400	520	445	The development project for this site is being studied at a project-specific level in this EIR. However, the proposed rezoning on this site would occur regardless of whether the proposed 30 Van Ness Avenue Project is approved or implemented.
1500–1540 Market Street	Office, ground-floor retail	18,700	40	400	450	410	This site contains multiple addresses/parcels. On June 15, 2017, the planning commission certified a separate EIR for a mixed-use project on this site that would have developed 310 residential units, approximately 4,024 square feet of commercial space and various streetscape improvements (1500–1540 Market Street, Case No. 2009.0159E also referred to as the "One Oak Project"). The One Oak Project, which was approved and entitled for construction, has not started

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
							construction. This site is included as one of the Hub Plan sites considered for upzoning as it would allow for an additional 50 feet above what was approved as part of the previous One Oak Project.
98 Franklin Street	Vehicular parking lot	20,806	0	85	365	365	The development project for this site is being studied at a project-specific level in this EIR. However, the proposed rezoning on this site would occur regardless of whether that project is approved or implemented.
1 South Van Ness Avenue	Office	65,000	157	400	650	493	
10 South Van Ness Avenue	Vacant	50,800	55	400	590	535	This site contains two addresses/ parcels. A separate EIR is being prepared for a project on this site (Case No. 2015-004568ENV) that proposes to demolish the existing two-story building and construct an approximately 1,071,000-

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
							square-foot residential complex with ground-floor retail. That project would include two 41-story, 400-foot-tall towers (420 feet, including rooftop features) and 984 dwelling units. A variant was also studied in that EIR that considered a single 590-foot-tall tower (610 feet total, including roof screens, and elevator penthouses) and a similar program to the project being considered in that EIR. The Draft EIR for that project was published on October 17, 2018, with the responses to comments document currently in progress. This EIR for the Hub Plan considers this site for upzoning to 590 feet (consistent with the height analyzed as the variant considered in the parallel EIR).

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
30 Otis Street	Formerly vacant industrial warehouse, ballet school	35,987	270	250	320	50	On September 27, 2018, the planning commission certified a community plan evaluation under the Market and Octavia Area Plan EIR and a focused EIR for a separate project on this site (30 Otis Street, Case No. 2015-010013ENV). That project included the demolition of five existing buildings on the site and construction of an approximately 250-foot tall mixed-use building, totaling approximately 405,000 square feet and comprised of a 10-story podium structure across the entire site and a 27-story tower with 423 dwelling units, approximately 5,600 square feet of ground floor retail, and 17,000 square feet of arts activity space. This site is included as one of the Hub Plan sites considered for

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
							upzoning as it would allow for an additional approximately 70 feet above what is being considered in the previously certified EIR. In December 2018, construction began on the 250-foot tall project. As this EIR was in the process of conducting technical studies and analysis, the information presented in this document considered demolition of the previously existing structures and construction of a 320-foot structure.
42 Otis Street	Warehouse, office	4,083	45	50	65	20	On September 13, 2018, the planning commission denied a request for a Discretionary Review and approved a building permit for a separate project on this site (Case No. 2016-005406ENV). That project, which was analyzed in a community plan evaluation under the Market and Octavia Area

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
							Plan EIR, would demolish the existing building and construct a new 15,805-square-foot, five-story, 55-foot-tall, mixed-used building. As of spring 2019, this project had not started construction. This site is included as one of the Hub Plan sites considered for upzoning as it would allow for an additional 15 feet above what was approved as part of the previously proposed project.
50 Otis Street	Office, motorcycle repair at ground floor	4,626	46	50	65	19	
170 Otis Street	City office	47,182	115	85 and 125	45, 85, and 150	35	This site contains multiple addresses/ parcels. The current site is split between 85-X and 125-X height and bulk zoning districts. The EIR analyzes at the programmatic-level the

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
							proposed shifting of the 125-X zoning to a different portion of the site to better align it with the footprint of the existing office building, which has a height of approximately 115 feet. In addition, the proposed rezoning at 170 Otis Street would create a 45-X height and bulk-zoned buffer along the west side of the site, to provide for a more appropriate transition to the existing low-scale housing along that side, as well as a similar buffer from the residential building at 150 Otis Street.
99 South Van Ness Avenue	Commercial (public storage)	61,000	69	120	250	181	
33 Gough Street	Office	45,600	30	85	250	220	

TABLE 2-1. PROPOSED CHANGES TO HEIGHT LIMITS

Address	Current Land Use	Existing Site Size (square feet)	Current Height (feet) "CEQA Baseline"	Current Maximum Height Allowed under Existing Zoning (feet)	Proposed Height Limit (feet)[1]	Change from Existing Height to Proposed Height Limit (feet)	Notes
110 12th Street	Industrial, vehicular parking lot	10,524	34	85	120	86	
180 12th Street	Industrial	12,048	30	85	120	90	
194 12th Street	Industrial	5,776	34	85	120	86	
154 South Van Ness Avenue	Retail	13,422	42	85	120	78	
160 South Van Ness Avenue	City-leased office	14,000	37	85	120	83	
170 South Van Ness Avenue	Commercial retail	49,000	38	85	120	82	
1695 Mission Street	Industrial	64,612	39	85	120	81	

Source: San Francisco Planning Department 2018.

[1] Per planning code section 260, additional height is permitted for rooftop mechanical features.

Circulation, Streetscape Improvements, and Street Network Changes

The Hub Plan area's relatively high density is supportive of walking, although the wide and predominantly one-way streets, vacant lots and buildings, long blocks, intermittent narrow sidewalks, and elevated freeway segments with associated ramps do not contribute to a positive walking or bicycling experience and present many physical challenges related to circulation for people walking or people bicycling in the area. The Hub Plan proposes to improve major streets and alleys in the Hub Plan area, as shown in **Figure 2-2**, p. 2-4. The goals of these changes are to create a safer transportation experience for everyone; make transit, walking, bicycling, and car-sharing the preferred ways for people to travel; facilitate passenger loading and commercial deliveries; and enhance the public realm. Other projects in the city, such as the Van Ness Avenue Bus Rapid Transit Project and Better Market Street Project, as well as other private development projects, are evaluating and implementing other streetscape and street network improvements in the vicinity of the Hub Plan; these other improvements, which are independent of the Hub Plan area, will be considered in the cumulative analysis.

To ensure that the proposed streetscape and street network improvements foster development of a neighborhood that is consistent with the Hub Plan's goals, the Hub Plan incorporates Market and Octavia Area Plan Objectives 7.1 and 7.2, which aim to "create a vibrant, new mixed-use neighborhood in SoMa west" and "establish a functional, attractive, and well-integrated system of public streets and open spaces in the SoMa west area to improve the public realm," respectively. The Hub Plan builds off of these existing policies and is consistent with the intent of the Market and Octavia Area Plan. Furthermore, the Hub Plan proposes circulation changes at major intersections, such as Market Street and Van Ness Avenue as well as Mission Street and South Van Ness Avenue, to improve safety.

Streets

Specific design recommendations for implementing the goals of the Hub Plan have been developed for the following streets:

- 12th Street: Market Street to Mission Street
- Gough Street: Stevenson Street to Otis Street
- Mission Street/South Van Ness Avenue intersection
- South Van Ness Avenue: Mission Street to 13th Street
- Otis Street: South Van Ness Avenue to Duboce Avenue
- 13th Street/Duboce Avenue: Folsom Street to Valencia Street

The streets with proposed improvements are shown in **Figure 2-2**, p. 2-4.

12TH STREET: MARKET STREET TO MISSION STREET

The block of 12th Street between Market and Mission streets is currently a 15-foot-wide, two-way, two-lane street with very low vehicular traffic volumes. Major new developments would line 12th Street with active ground-floor uses and residential uses above. The Market and Octavia Area Plan identified the need to redesign 12th Street to recapture space for people walking. The Hub Plan builds on the intent of the Market and Octavia Area Plan by repurposing the public right-of-way to create wider sidewalks and encourage a more active and landscaped environment for people walking.

Proposed improvements for 12th Street from Market Street to Mission Street are shown in **Figure 2-8** and include the following:

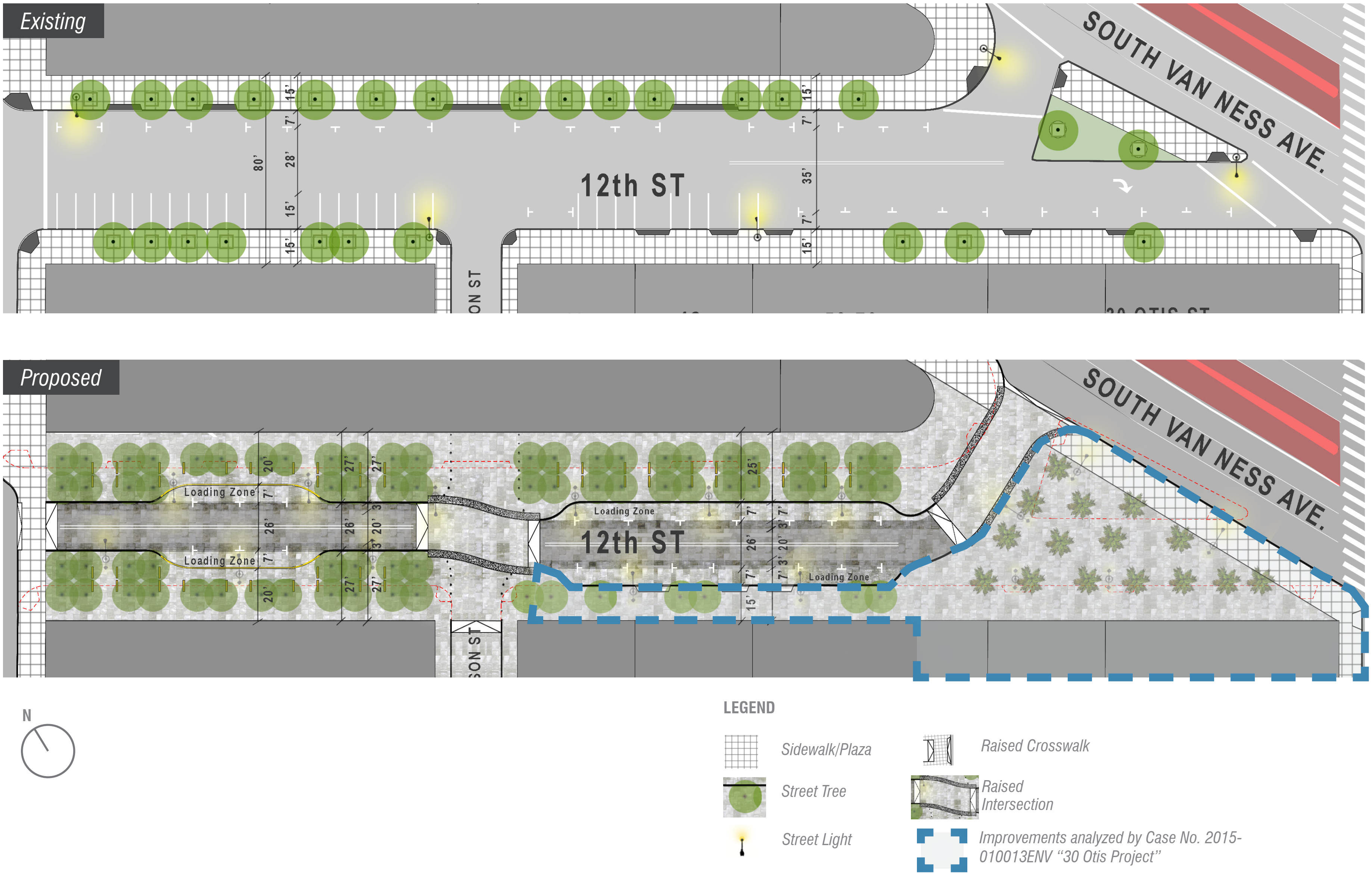
1. Widen sidewalks and create new linear public open spaces with street trees. The east sidewalk of 12th Street would be widened from 15 to 30 feet for the full length of the block. This would create a linear park experience, leading into the large public plaza at the south end of 12th Street, which is being implemented with realignment of 12th Street, as part of the Van Ness Bus Rapid Transit Project.
2. Upgrade streetlights to City standards and provide new lights scaled for people walking and other streetscape amenities.

GOUGH STREET: STEVENSON STREET TO OTIS STREET

On Gough Street between Stevenson and Otis streets, Gough Street is currently a two-way street with two southbound travel lanes and three northbound travel lanes. The Hub Plan redesign would widen the sidewalk fronting 33 Gough Street to create space for retail at the Gough Street/Otis Street intersection. It also proposes widening the east and west sidewalks on Gough Street, reconfiguring vehicular parking, and making other changes to the intersection, all of which are aimed at calming vehicular traffic to improve safety for all users and enhance the experience for people walking.

Proposed improvements for Gough Street from Stevenson Street to Otis Street are shown in **Figure 2-9**, p. 2-35, and include the following:

1. Widen the west sidewalk of Gough Street from 11 to 19 feet between Stevenson and Otis streets. Retain two southbound travel lanes on Gough Street. Retain a single northbound through lane from the new two-way Otis Street.
2. Widen the east sidewalk of Gough Street, fronting 8–12 Gough Street and 86 Otis Street, from 5 to 15 feet. Reconfigure vehicular parking in the local access lane on the east side of Gough Street.



Source: San Francisco Planning Department, 2019.

Figure 2-8
12th Street: Market Street to Mission Street

Source: San Francisco Planning Department, 2019.

ICF Graphics ... 00700.17 (4-4-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-9
Gough Street: Stevenson Street to Otis Street and Otis Street: South Van Ness Avenue to Duboce Avenue

MISSION STREET/SOUTH VAN NESS AVENUE INTERSECTION

The Mission Street and South Van Ness Avenue intersection is a convergence of six different streets with different scales and unusual geometries. Currently, South Van Ness Avenue is a two-way street with three travel lanes in each direction, 12th Street is a two-way street with one travel lane in each direction, Otis Street is a one-way street with four southbound travel lanes, and Mission Street is a one-way street with five northbound travel lanes. The Mission Street and South Van Ness Avenue intersection has high volumes of users, high rates of injury for all users, and is characterized by long crossings, long wait times, and high-speed, high-volume vehicular traffic. Although the intersection is heavily used by people walking, it also plays an important role in the efficient movement of all modes of traffic on U.S. 101 (Van Ness Avenue) as well as the heavy volume of surface transit. As a result, there are limitations with respect to major improvements.

The Hub Plan redesign is consistent with and adds to MTA's designs for this intersection, as analyzed and approved through the Muni Forward project and the Van Ness Avenue BRT project. The Hub Plan redesign would realign 12th Street to create a new 12th Street plaza in coordination with the Van Ness Bus Rapid Transit project. Under the Hub Plan, South Van Ness Avenue and 12th Street would remain two-way streets, and Otis Street and Mission Street would remain one-way streets.

Improvements proposed as part of the Hub Plan for the Mission Street/South Van Ness Avenue intersection are shown in **Figure 2-10** and include the following:

1. Realign the median and upgrade the refuge for people walking on Mission Street east of South Van Ness Avenue, widen the northeast corner of South Van Ness Avenue and Mission Street with a bulb-out, and widen the Otis Street and Mission Street corner, consistent with MTA's 14R Muni Forward and Van Ness Avenue BRT projects.
2. Widen the east sidewalk on South Van Ness Avenue south of Mission Street, as further discussed below under South Van Ness Avenue: Mission Street to 13th Street.
3. Widen the sidewalks on both the north side of Mission Street and south side of Otis Street west of South Van Ness Avenue to expand space for people walking at this intersection. The widened sidewalk on Mission Street would replace the existing U-turn lane, which would be removed under the improvements along Otis Street (see Otis Street: South Van Ness Avenue to Duboce Avenue, p. 2-38).
4. Simplify the intersection for people walking and provide more crossing time for people walking by eliminating the U-turn from eastbound Mission Street to westbound Otis Street.

Source: San Francisco Planning Department, 2019.

ICF Graphics ... 00700.17 (4-4-2019)

Figure 2-10
Mission Street/South Van Ness Avenue Intersection

South Van Ness Avenue: Mission Street to 13th Street

As the southbound route for U.S. 101, South Van Ness Avenue between Mission and 13th streets is a heavily traveled auto-dominated block with three travel lanes in each direction that feed the Central Freeway entrance south of 13th Street. The Hub Plan would change the existing street configuration to a boulevard design. Implementing this design would require close coordination with and approval from the California Department of Transportation (Caltrans), which manages U.S. 101.

Proposed improvements for South Van Ness Avenue from Mission Street to 13th Street are shown in **Figure 2-11**, and include the following:

1. Redesign South Van Ness Avenue as a boulevard for safety, vehicular traffic calming, and livability for residents, with through travel lanes separated from local lanes by planted medians. Retain the existing three lanes of vehicular traffic in each direction and use a boulevard-style design separating two lanes of vehicular traffic in each direction from a third local lane with use of a side median. Retain the on-street vehicular parking on both sides of South Van Ness Avenue but narrow all travel lane widths to accommodate the medians.
2. Widen or upgrade sidewalks up to 8 feet.
3. Add new lighting for people walking, per Better Streets Plan guidelines.
4. Incorporate a decorative railing along the central median, with combined lighting fixtures for people walking and the roadway as well as infill median lights.
5. Add bulb-outs at the Mission Street and 12th Street intersections.
6. Add a new signalized crossing for people walking and sidewalk bulb-outs in the middle of the block.
7. Remove the existing slip lane at the intersection of Howard Street and northbound South Van Ness Avenue to create a more typical intersection.

6. Prohibit southbound left-turn movement from South Van Ness Avenue to eastbound 13th Street at all times of the day.

Otis Street: South Van Ness Avenue to Duboce Avenue

Otis Street is a one-way, two-block-long street that functions as a couplet with Mission Street between South Van Ness and Duboce avenues. The Hub Plan design proposes modifying this segment from four southbound (vehicular) travel lanes, plus two on-street vehicular parking lanes (one each on the north and south sides of Otis Street) and a bike lane along the north side of Otis Street, to two southbound lanes and one northbound lane. In addition, the Gough,

Source: San Francisco Planning Department, 2019.

ICF Graphics ... 00700.17 (4-4-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-11
South Van Ness Avenue: Mission Street to 13th Street

Otis, and McCoppin streets intersection is a convergence of three streets with different scales and unusual geometries. The Hub Plan redesign is consistent with and builds on MTA's design for Otis Street, as part of its Muni Forward project.

Proposed improvements for Otis Street from South Van Ness Avenue to Duboce Avenue are shown in **Figure 2-9**, p. 2-35, and include the following:

1. Widen the east sidewalk of Otis Street between South Van Ness Avenue and Gough Street, leaving a loading zone cut-in central to the block. The widened sidewalk on Otis Street would replace all on-street vehicular parking spaces.
2. Redesign Otis Street between Gough Street and Duboce Avenue to allow a new northbound travel lane. This new lane could be accessed both from northbound Mission Street or the Central Freeway off-ramp at Duboce Avenue. Vehicles traveling westbound on 13th Street to Duboce Avenue would not be permitted to turn right onto northbound Otis Street. Remove the U-turn lane from Mission Street to Otis Street. Prohibit U-turns.
3. Upgrade streetlights to City standards and provide new lighting for where appropriate.
4. Plant infill street trees.

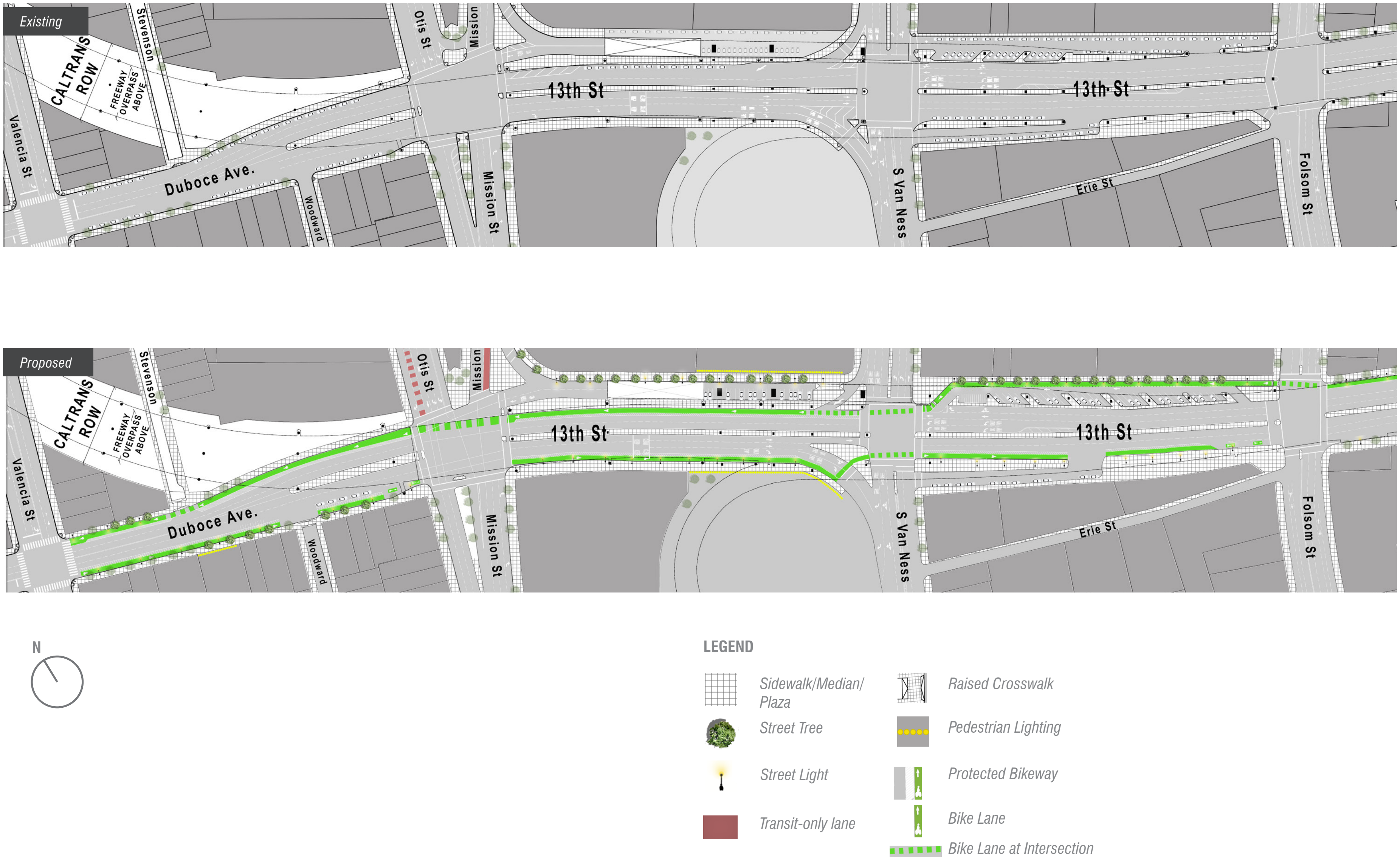
13TH STREET/DUBOCE AVENUE: FOLSOM STREET TO VALENCIA STREET

The heavily traveled auto-dominated segment of 13th Street/Duboce Avenue from Folsom Street to Valencia Street is used to enter or exit the Central Freeway or continue on local streets. The number of travel lanes vary through this segment, with three to four travel lanes in each direction. Although these streets run beneath U.S. 101, 13th Street/Duboce Avenue are also used by people walking and bicycling because they are flat and provide a direct connection from SoMa to the Mission neighborhood. The proposed safety improvements for the bikeway and people walking would connect the existing westbound vehicular-parking-protected bikeway on 13th Street, which stretches from Potrero Street to Folsom Street, to the western end of 13th Street at Mission Street, then continue and connect to Valencia Street via Duboce Avenue.

Proposed improvements for 13th Street/Duboce Avenue from Folsom Street to Valencia Street are shown in **Figure 2-12** and include the following:

1. Add a new protected westbound bikeway on 13th Street from Folsom Street to Mission Street and on Duboce Avenue from Mission Street to Valencia Street. On the three blocks within this area, the protected bikeway would be created as follows:
   a. On 13th Street from Folsom Street to South Van Ness Avenue, create a protected bikeway by replacing existing on-street curbside vehicular parking in the westbound service lane of 13th Street and protected by a railing, bollards, or posts.

      Approaching South Van Ness Avenue, the bikeway would swing out of the service lane around a new bulb-out on the northeast corner of South Van Ness Avenue and 13th Street.



Source: San Francisco Planning Department, 2019.

Figure 2-12
13th Street/Duboce Avenue: Folsom Street to Valencia Street

b. On 13th Street between South Van Ness Avenue and Mission Street, create a protected bikeway, in part, by using excess roadway as well as replacing all existing on-street curbside metered vehicular parking.

c. On Duboce Street between Valencia and Mission streets, create protected bikeway by replacing one of three existing travel lanes from Stevenson Street to Mission Street and on-street curbside vehicular parking from Stevenson Street to Valencia Street. Removing a 400-foot-long segment of a travel lane on Duboce Avenue is possible at this location because of the new signal phase at Duboce Avenue/13th Street and Mission Street (see improvement #3, below), separating people driving and bicycling while traveling west on 13th Street to Duboce Avenue from vehicles exiting the Central Freeway and continuing westbound onto Duboce Avenue. Retain three travel lanes on westbound Duboce Avenue west of Stevenson Street.

2. Add a protected eastbound bikeway on 13th Street from Folsom Street to Mission Street and on Duboce Avenue from Mission Street to Valencia Street.

3. Implement a signal phase change at Duboce Avenue/13th Street and Mission Street, separating westbound vehicles and bicycles traveling from 13th Street to westbound Duboce Avenue from westbound vehicles traveling from the Central Freeway off-ramp to westbound Duboce Avenue. This signal phase change is required to allow people bicycling while traveling westbound on 13th Street to continue to the bikeway on westbound Duboce Avenue without conflict from vehicles exiting the Central Freeway. Implementing this signal phase change will require coordination with and approval from Caltrans.

4. Open the currently closed sidewalk and improve the sidewalk connection between Mission Street and South Van Ness Avenue on the north side of 13th Street. Add new street trees and lighting for people walking.

5. Reorganize vehicular parking under the Duboce Avenue and U.S. 101 northbound off-ramp to allow for a continuous sidewalk between Mission Street and South Van Ness Avenue, as noted above under improvement #4, and enable widening of the existing sidewalk where it approaches South Van Ness Avenue to add space for people walking.

6. Reconfigure vehicular parking in the service lane of 13th Street between Folsom Street and South Van Ness Avenue to fill in existing street space east of the service lane entrance, which is currently used for vehicular parking, creating an expanded sidewalk space approaching Folsom Street. Adding a cut-through in this filled-in and expanded sidewalk space on Folsom Street at 13th Street would facilitate the movement of people bicycling from westbound 13th Street east of Folsom Street to the new bikeway in the service lane of 13th Street west of Folsom Street.

7. Construct bulb-outs on the northeast corner of South Van Ness Avenue and 13th Street and the southwest corner of Folsom Street and 13th Street.
8. Construct vehicular traffic islands on the southwest and northwest corners of 13th Street and South Van Ness Avenue, remove the island and pork chop on the northwest corner of the intersection, and widen the side median on the south side of 13th Street east of South Van Ness Avenue.
9. Construct a raised crosswalk at Woodward Street and Duboce Avenue.
10. Plant trees.

ALLEYS

Alleys within the Hub Plan area are small-scale streets that typically carry relatively low numbers of vehicles. People driving use primarily the alleys when accessing adjacent properties. The character of the alleys varies across the neighborhood, from residential alleys to service alleys. In general, per the Better Streets Plan and Living Alleys Toolkit,[19] San Francisco alleys should be designed to reinforce the right-of-way as a space for people walking; vehicle speeds should be kept low through vehicular traffic calming; materials should encourage visual interest through high-quality materials, finishes, and detailing; and alley amenities can include public seating, landscaping, and lighting for people walking to create usable public spaces that are unique and comfortable.

Alleys within the Hub Plan are intended to have a consistent palette of materials that is harmonious with the existing upgraded alleys within the Market and Octavia Area Plan, such as Jessie and Stevenson streets between McCoppin Street and Duboce Avenue. These alleys typically have high-quality paving in the roadway, raised crosswalks at intersections, and trees and other landscaping where feasible. The development of specific design recommendations for all Hub Plan alleys has been based on these existing design precedents but has also built on these designs to improve design conditions, particularly for people walking and bicycling. Recommendations that implement the primary goals of the Hub Plan have been developed for the following alleys:

- Rose Street: Gough Street to Market Street
- Minna Street: 10th Street to Lafayette Street
- Lafayette Street: Mission Street to Howard Street
- Stevenson Street: Brady Street to Gough Street
- Colusa Place: Colton Street to Chase Court
- Chase Court: Colusa Place to Dead-End

[19] San Francisco Planning Department, Living Alleys Toolkit, *https://sfplanning.org/living-alleys-toolkit*, accessed January 2, 2019.

- Colton Street: Brady Street to Gough Street
- Brady Street: Colton Street to Otis Street
- Plum Street: Mission Street to South Van Ness Avenue
- Jessie Street: South from McCoppin Street
- Stevenson Street: McCoppin Street to Duboce Avenue
- Lily Street: Franklin Street to Gough Street (discussed as part of the 98 Franklin Street Project)

The alleys with proposed improvements are shown in **Figure 2-2**, p. 2-4, and improvements described further below.

ROSE STREET: GOUGH STREET TO MARKET STREET

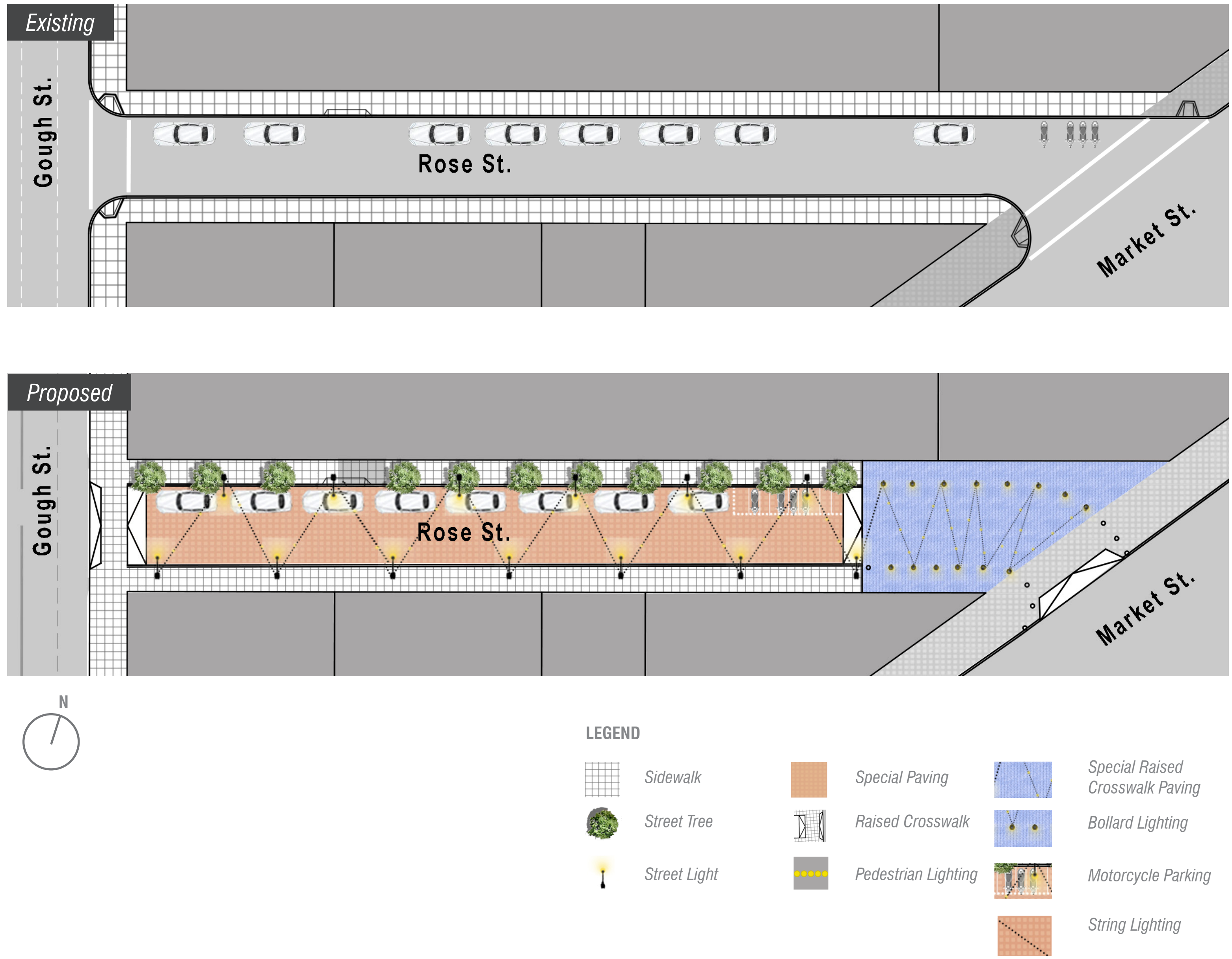
Proposed improvements at Rose Street from Gough Street to Market Street are shown in **Figure 2-13**, and include the following:

1. Add a raised crosswalk at Gough Street.
2. Add a large raised crosswalk at Market Street.
3. Add high-quality paving in the roadway.
4. Add infill street trees and raised planters to screen receptacles for garbage, compost, and recycling.
5. Provide additional commercial and passenger loading/valet pickup and drop-off and motorcycle parking.

MINNA STREET: 10TH STREET TO LAFAYETTE STREET

Proposed improvements at Minna Street from 10th Street to Lafayette Street are shown in **Figure 2-14**, p. 2-46, and include the following:

1. Add raised intersections on Minna Street at 10th and 11th streets.
2. Add trees and bollards and/or other lighting for people walking.



Source: San Francisco Planning Department, 2018.

Figure 2-13
Rose Street: Gough Street to Market Street

Source: San Francisco Planning Department, 2018.

Figure 2-14
Minna Street: 10th Street to Lafayette Street

LAFAYETTE STREET: MISSION STREET TO HOWARD STREET

Proposed improvements at Lafayette Street from Mission Street to Howard Street are shown in **Figure 2-15**, and include the following:

1. On Lafayette Street, at both Minna and Natoma streets, add raised intersections that are protected by truncated domes and bollards, high-quality paving in the roadway, and gateway features to emphasize these special small-scale entrances for people walking to and gathering places for this neighborhood.
2. Add raised intersections on Lafayette Street at Mission Street and Howard Street.
3. Add high-quality paving and infill planting at the end of Natoma Street for temporary outdoor events/games to make this a potential play street.[20]
4. Add trees and bollards and/or other lighting for people walking.

STEVENSON STREET: BRADY STREET TO GOUGH STREET

Proposed improvements at Stevenson Street from Brady Street to Gough Street are shown in **Figure 2-16,** p. 2-49**,** and include the following:

1. Convert this block of Stevenson Street from one-lane, one-way to two-lane, two-way vehicular access. All on-street vehicular parking spaces would be removed to allow for this conversion.
2. Add a raised crosswalk at Gough Street.
3. Add high-quality paving in the roadway.
4. Add trees, bollards, and lighting for people walking.

[20] Play streets repurpose street rights-of-way to create large areas of public space for active recreational uses, such as basketball, hopscotch, and other unstructured play activities. Although play streets still accommodate local vehicular traffic, they typically include intense vehicular traffic calming to promote very slow driving speeds and allow people to use the street comfortably.

Source: San Francisco Planning Department, 2018.

ICF Graphics ... 00700.17 (1-7-2019)

Figure 2-15
Lafayette Street: Mission Street to Howard Street

Source: San Francisco Planning Department, 2018.

ICF Graphics ... 00700.17 (1-7-2019)

Figure 2-16
Stevenson Street, Chase Court, Colton Street, and Brady Street

CHASE COURT: COLUSA PLACE TO DEAD-END

Proposed improvements at Chase Court from Colusa Place to the dead-end are shown in **Figure 2-16**, p. 2-49, and include the following:

1. Convert these dead-end alleys to shared public ways or equivalent to prioritize use for people walking.
2. Pave the alleys with high-quality paving, consistent or harmonious with that used within Brady Park.[21]
3. Remove all on-street vehicular parking spaces to improve access and safety for all users.
4. Add infill trees and lighting for people walking.

COLTON STREET: BRADY STREET TO GOUGH STREET

Proposed improvements at Colton Street from Brady Street to Gough Street are shown in **Figure 2-16**, p. 2-49, and include the following:

1. Convert this block of Colton Street to an alley for only people walking. Maintain garage access for existing use at 38 Gough Street, which has a garage on this block, while still restricting all other vehicular access.
2. Pave this block of Colton Street with materials consistent with those used on Colton Street east of Brady Street as well as those used on Colusa Place and Chase Court.
3. Add infill trees, bollards, and lighting for people walking.

BRADY STREET: COLTON STREET TO OTIS STREET

Proposed improvements at Brady Street from Colton Street to Otis Street are shown in **Figure 2-16**, p. 2-49, and include the following:

1. Add raised crosswalks at Otis Street.
2. Add a raised intersection at Colton Street as a connector between Colton Street and Brady Park.
3. Add infill trees, bollards, and lighting for people walking.
4. Accommodate on-street commercial and passenger loading to help support strict no-loading provisions on Market Street.
5. Maintain Brady Street as a two-way street between Stevenson Street and Otis Street.

---

[21] Brady Park would be owned by United Association Local 38 Plumbers and Pipefitters Union and BART and would be developed as a park as part of the development at 1601–1637 Market Street and 53 Colton Street (2015-005848ENV).

PLUM STREET: MISSION STREET TO SOUTH VAN NESS AVENUE

Proposed improvements at Plum Street from Mission Street to South Van Ness Avenue are shown in **Figure 2-17**, and include the following:

1. Add raised crosswalks at the Mission Street and South Van Ness Avenue intersection.
2. Widen sidewalks to match adjacent alignment and provide a consistent amount of space for people walking.
3. Add trees, bollards, and lighting for people walking.

JESSIE STREET: SOUTH FROM MCCOPPIN STREET

Proposed improvements at Jessie Street south from McCoppin Street are shown in **Figure 2-18**, p. 2-53 and include the following:

1. Add trees, bollards, and lighting for people walking, including potential string lighting.
2. Upgrade chain-link fences per the San Francisco Green Landscape Ordinance.[22]

STEVENSON STREET: MCCOPPIN STREET TO DUBOCE AVENUE

Proposed improvements at Stevenson Street from McCoppin Street to Duboce Avenue are shown in **Figure 2-19**, p. 2-54, and include the following:

1. Add a new bulb-out at Duboce Avenue with public seating, bicycle parking, bollard lights, and raised planters.
2. Add trees, raised planters, and lighting for people walking.

AUXILIARY WATER SUPPLY SYSTEM, STREETLIGHTS, AND PARKING

The Hub Plan could result in changes to San Francisco's Auxiliary Water Supply System (AWSS). The AWSS is a discontiguous historic district that extends across San Francisco. Contributing features of this district exist within the streetscape of the Hub Plan area. The high-pressure AWSS fire hydrants, the most ubiquitous features of the system, are found along Market Street, Van Ness Avenue, and Mission Street. In addition, a sub-surface AWSS cistern is found within the Duboce Avenue right-of-way near the intersection at Mission Street, along the southern boundary of the Hub Plan area. Although AWSS hydrants are found where streetscape and street network improvements are proposed as part of the Hub Plan (e.g., at the intersection of Mission Street and South Van Ness Avenue and at Lafayette Street and Mission Street), how the AWSS hydrants would be treated is not known. The hydrants could be moved to new locations or replaced.

---

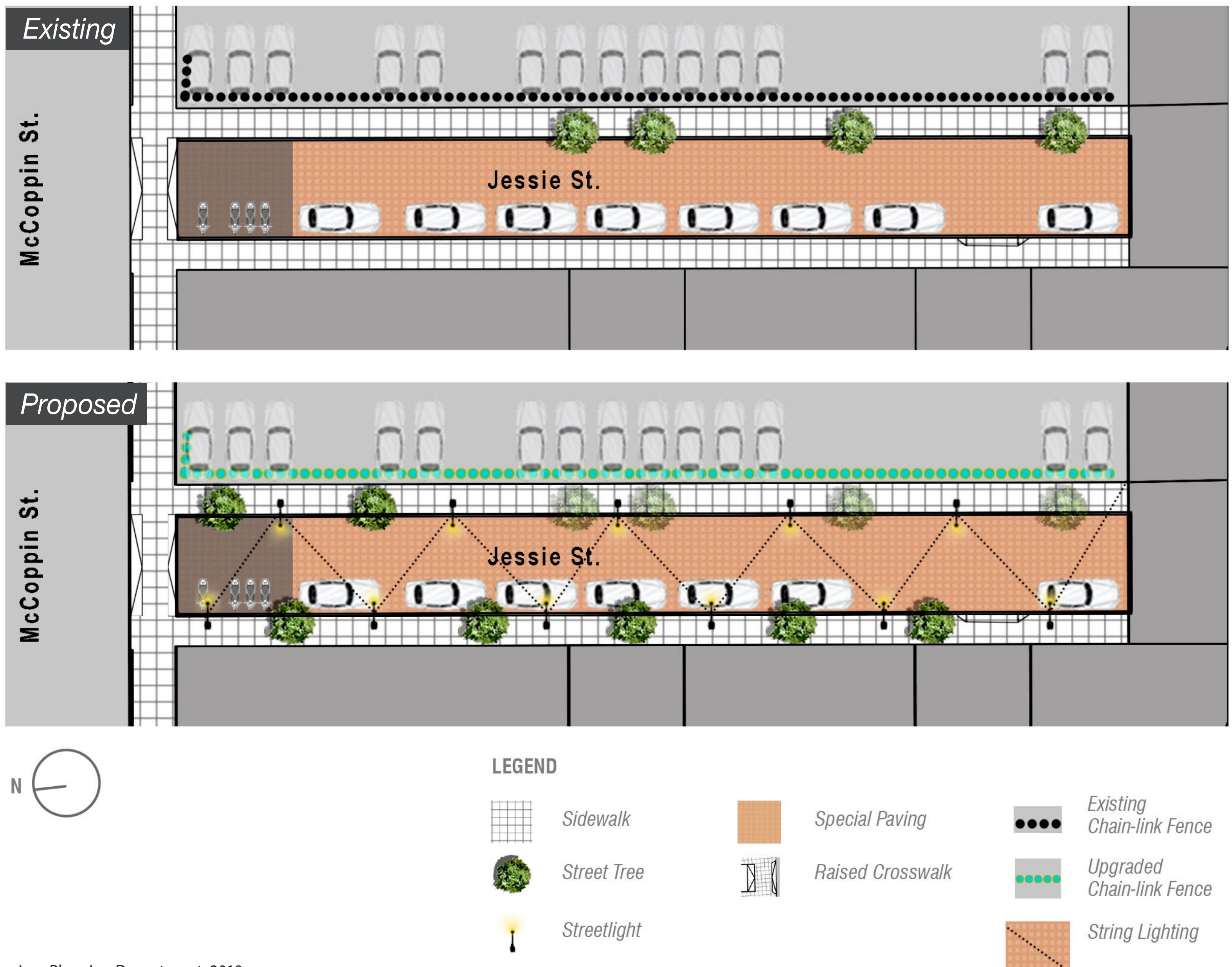
22 San Francisco Planning Department, *Guide to the San Francisco Green Landscaping Ordinance*, April 2010, *https://www.sf-planning.org/ftp/files/publications_reports/Guide_to_SF_Green_Landscaping_Ordinance.pdfhttp://default.sfplanning.org/Citywide/Market_Octavia/Market_and_Octavia_Area_Plan_2010.pdf*, accessed January 2, 2019.

ICF Graphics ... 00700.17 (11-15-2018)

Source: San Francisco Planning Department, 2018.

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

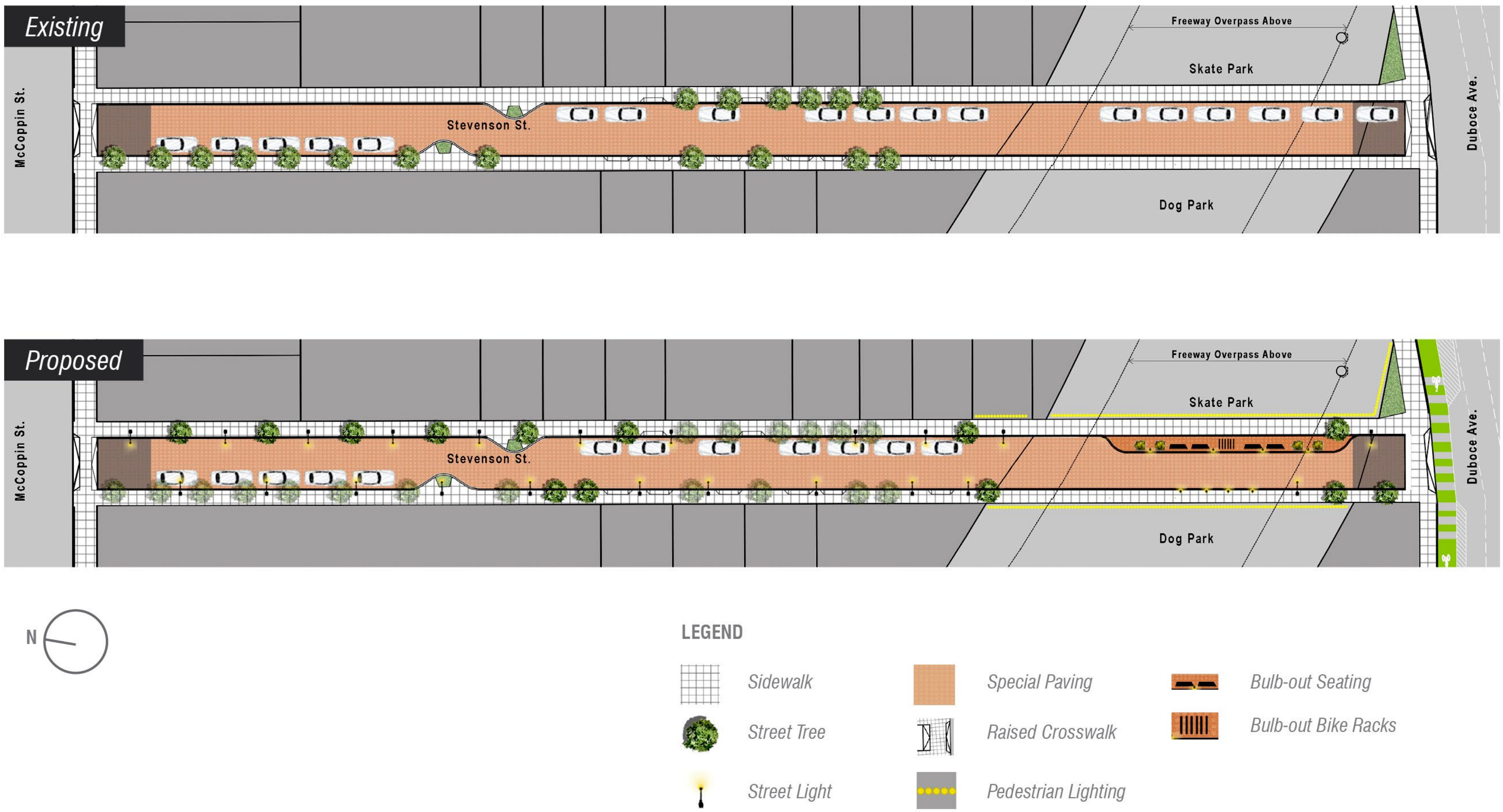
Figure 2-17
Plum Street: Mission Street to South Van Ness Avenue



ICF Graphics ... 00700.17 (11-15-2018)

Source: San Francisco Planning Department, 2018.

Figure 2-18
Jessie Street: South from McCoppin Street



Source: San Francisco Planning Department, 2018.

Figure 2-19
Stevenson Street: McCoppin Street to Duboce Avenue

In addition to the AWSS, historic-age streetlights are found within the streetscape of the Hub Plan area. These are located in the median on Gough Street; between Market and Otis streets; along South Van Ness Avenue, between Mission and 13th streets; and at the intersection of Minna and Lafayette streets. The streetlights would be either be retained in place or relocated within the city; streetlights within West SoMa would be retained in place or relocated within the same district. Upgrades to the streetlights would be permitted. In addition, the streetscape and street network improvements would result in a net decrease in the number of commercial loading spaces (i.e., eight) and a net increase in the number of passenger loading spaces (i.e., four). The streetscape and street network improvements would also result in the removal of approximately 135 general on-street vehicular parking spaces where streetscape and street network improvements are proposed (i.e., 31 vehicle parking spaces within alleys, 104 vehicle parking spaces on other streets).

E. CHARACTERISTICS OF INDIVIDUAL DEVELOPMENT PROJECTS

The following sections describe the characteristics of the two individual projects: 30 Van Ness Avenue and 98 Franklin Street.

30 VAN NESS AVENUE PROJECT

The proposed project at 30 Van Ness Avenue includes retention of portions of the existing office, retail, restaurant, and parking uses and construction of a 45-story building with ground-floor retail space, 11 floors of office space, and approximately 33 floors of residential space. The project sponsor for the 30 Van Ness Avenue Project is 30 Van Ness Development, LLC. The following describes the proposed project characteristics in detail.

SITE DESIGN AND LAYOUT

The proposed project at 30 Van Ness Avenue would include a 12-story podium, consisting of ground-floor retail and 11 floors of office space (levels 2 through 12). It would also include a residential amenity floor on level 13 and a residential tower with at least 350 but possibly up to 610 residential units on approximately 33 floors (levels 14 through 45), reaching a height of approximately 520 feet, with an additional 20 feet to the top of the rooftop mechanical features, as permitted by the planning code. The building podium would have a trapezoidal shape, with frontages along Market and Fell streets and Van Ness Avenue. The tower would be set back approximately 49 feet from the east face of the podium, 12 feet from the Van Ness Avenue face of the podium, 49 feet from the Fell Street face of the podium, and 85 feet from the Market Street face of the podium and situated at the center of the site. The podium height would be up to a maximum of 171 feet at the roofline. The podium would be 275 feet long by 162 feet wide, while the tower would be 141 feet long by 102 feet wide. In total, the existing structure would be altered and expanded from its existing envelope of approximately 184,100 square feet to approximately 826,000 square feet, a net increase of 641,900 square feet.

PROPOSED DEVELOPMENT

The proposed development at 30 Van Ness Avenue would total approximately 826,000 square feet, including up to 21,000 square feet of retail, up to 350,000 square feet of general office, and up to 520,000 square feet of residential,[23] as shown in **Table 2-2**. As noted above, the retail uses would be included on the ground floor. The podium (levels 2 through 12) would include the office uses, and the tower (levels 13 through 45) would include residential uses. In addition, the site for the 30 Van Ness Avenue Project would include approximately 76,320 square feet of garage uses for 243 vehicular parking spaces within two below-grade garage levels.

TABLE 2-2. PROPOSED DEVELOPMENT AT 30 VAN NESS AVENUE

	Count	Gross Square Feet
Residential Units (total)	610[1]	520,000
Studio	*229*	—
One-Bedroom Units	*229*	—
Two-Bedroom Units	*92*	—
Three-Bedroom Units	*60*	—
Commercial	—	371,000
Retail	—	*21,000*
Office	—	*350,000*
Open Space	—	32,580
Privately Owned Public Open Space		*3,300*
Commonly Accessible Open Space (residential)		*29,280*

Source: 30 Van Ness Development, LLC, 2018.

[1] Depending on unit size and layout, the project would have at least 350 residential units but could have up to 610 residential units.

The 30 Van Ness Avenue Project would include at least 350 residential units but possibly up to 610 residential units on floors 14 through 45. For purposes of this EIR, the more intensive number, 610 residential units, is evaluated. If 610 units are constructed, it would include the following unit mix: 229 studios (37.5 percent), 229 one-bedroom units (37.5 percent), 92 two-bedroom units (15 percent), and 60 three-bedroom units (10 percent). The 30 Van Ness Avenue Project would provide onsite affordable residential units for a mix of low- to moderate-income households (approximately 25 percent), offsite affordable residential units (approximately 33 percent), or a mix of onsite and offsite affordable residential units. If 610 units are constructed, there would be

[23] Note that 826,000 square feet is the maximum square footage that would be included as part of the project. It does not include the square footage for parking. An increase in office space above 250,000 square feet could result in a small corresponding decrease in the total square footage of residential uses.

approximately 19 residential units and 15,760 square feet of residential uses per floor. The percentages for the types of units (studio, one-bedroom, two-bedroom, and three-bedroom units) and affordable housing units would remain the same, regardless of the ultimate number of residential units constructed (350 to 610 units).

Two basement levels would include vehicle and bicycle parking spaces. The ground floor would include a total of approximately 21,000 square feet of retail space, including approximately 6,000 square feet of retail space and approximately 15,000 square feet of restaurant space. The ground floor would also include a lobby or vestibule for the office podium, a lobby for the residential tower, a bicycle storage area, and a loading dock. Levels 2 through 12 of the podium would include approximately 350,000 square feet of general office uses, with approximately 31,820 square feet of office uses per floor.

Level 13, the first floor of the residential tower, would include open space in the form of a podium roof deck. **Figure 2-20** shows the existing site plan. **Figures 2-21 to 2-26,** pp. 2-59 to 2-64, show the proposed development on basement levels 1 and 2, the ground-floor level, levels 2 through 8, and levels 9 through 12 as well as a typical residential plan. **Figures 2-27** and **2-28,** pp. 2-65 and 2-66**,** show the proposed building elevations from the north and west.

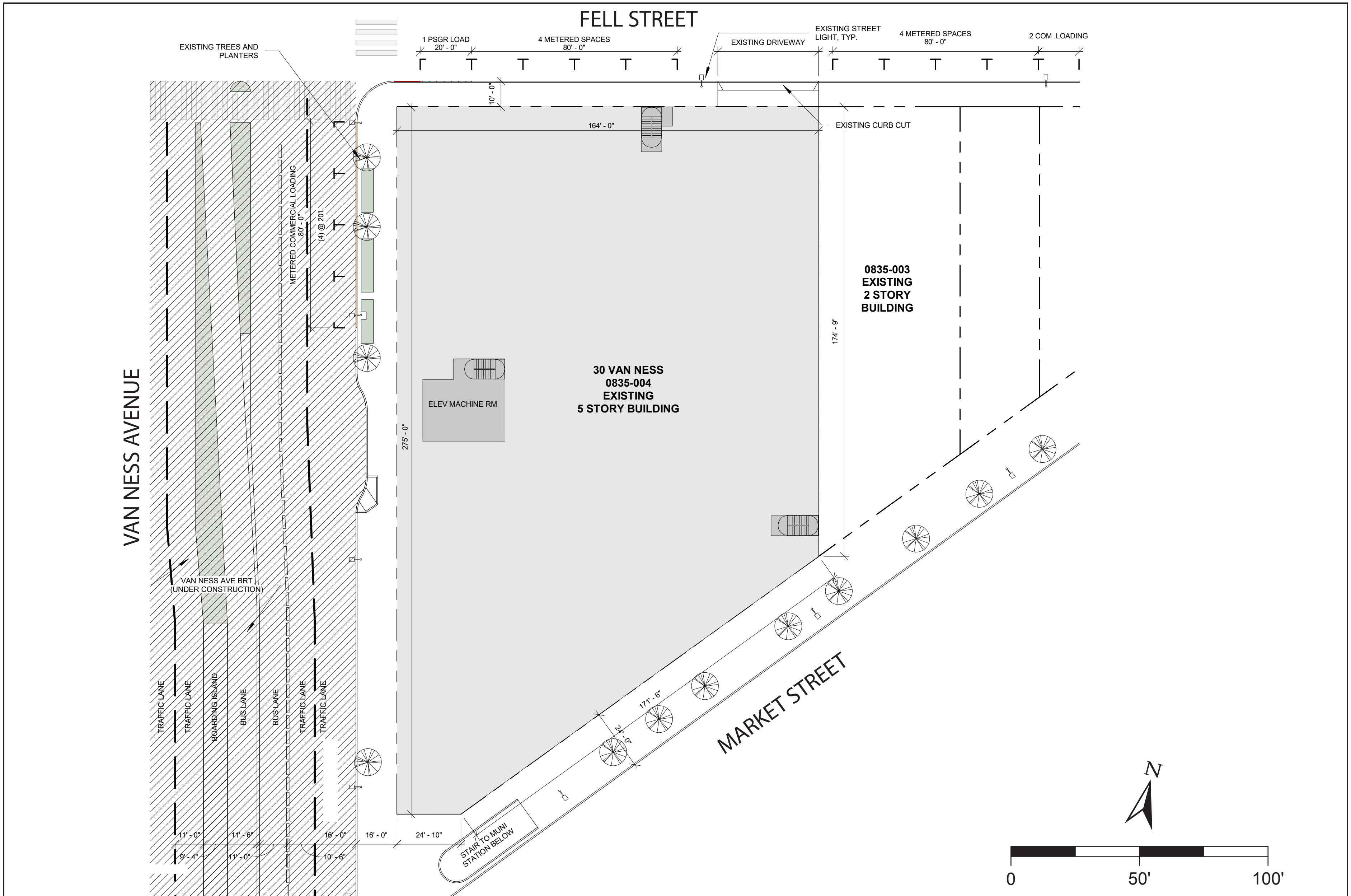
Lighting and signage for 30 Van Ness Avenue would be in compliance with City code. Additional street lighting would be installed along Fell Street. The building is anticipated to include standard security infrastructure and a staff to perform security functions for both residential and office uses. There would be approximately 1,520 employees at the project site during operation.

Proposed Open Space

The proposed project at 30 Van Ness Avenue would provide approximately 3,300 square feet of privately owned public open space on the ground floor. It would also provide approximately 29,280 square feet of commonly accessible open space for the office and for residents.[24] None of the proposed open space areas would include permanent sound amplification systems. Any noise at outdoor open space areas would be limited in order to not be in excess of noise ordinance requirements.

Construction may result in removal and replacement of up to nine existing trees along Van Ness Avenue and Market Street. New street trees would be planted as appropriate in accordance with the Better Streets Plan, which may result in a total of up to 17 trees along Van Ness Avenue and Market Street**.** Any proposed new, removed, or relocated street trees and/or landscaping within the public sidewalk may require a permit from San Francisco Public Works, Bureau of Urban

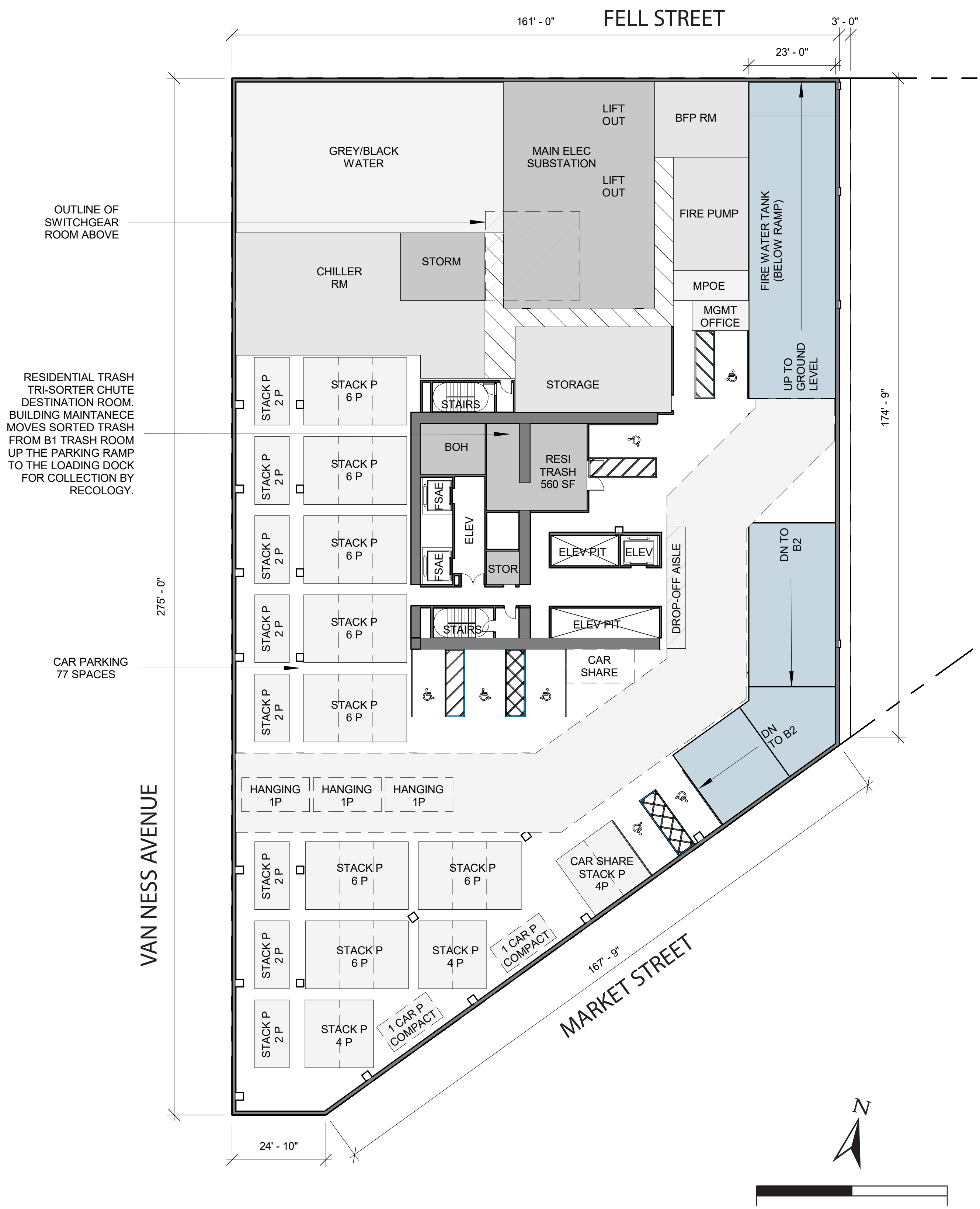
24 Based on a project with 610 residential units.



Source: Solomon Cordwell Buenz, 2019.

ICF Graphics ... 00700.17 (1-29-2019)

Figure 2-20
30 Van Ness Avenue Project – Existing Site Plan



Source: Solomon Cordwell Buenz, 2019.

Figure 2-21
30 Van Ness Avenue Project – Proposed Basement Level 1 Plan

Source: Solomon Cordwell Buenz, 2019.

ICF Graphics ... 00700.17 (1-29-2019)

Figure 2-22
30 Van Ness Avenue Project – Proposed Basement Level 2 Plan

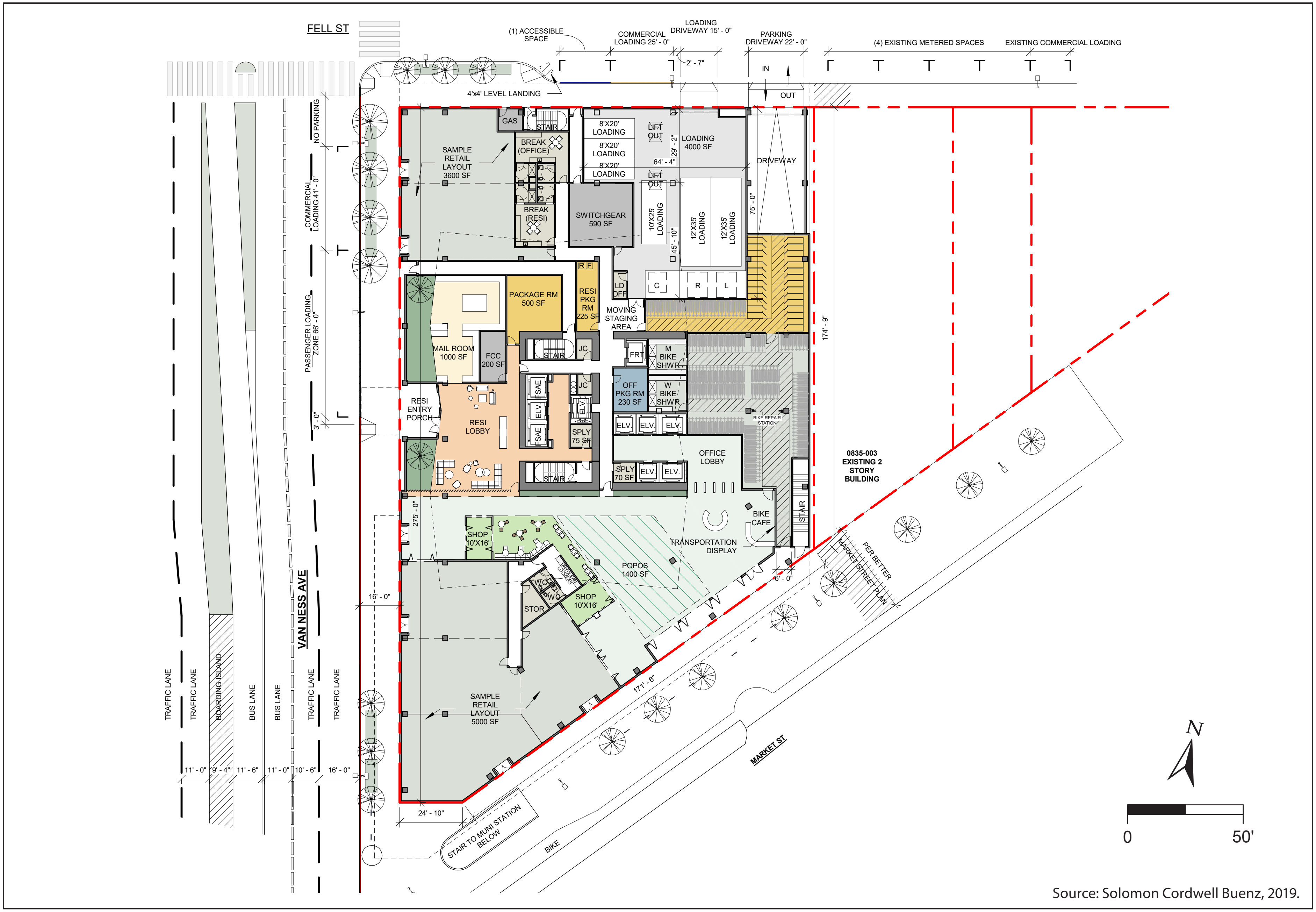
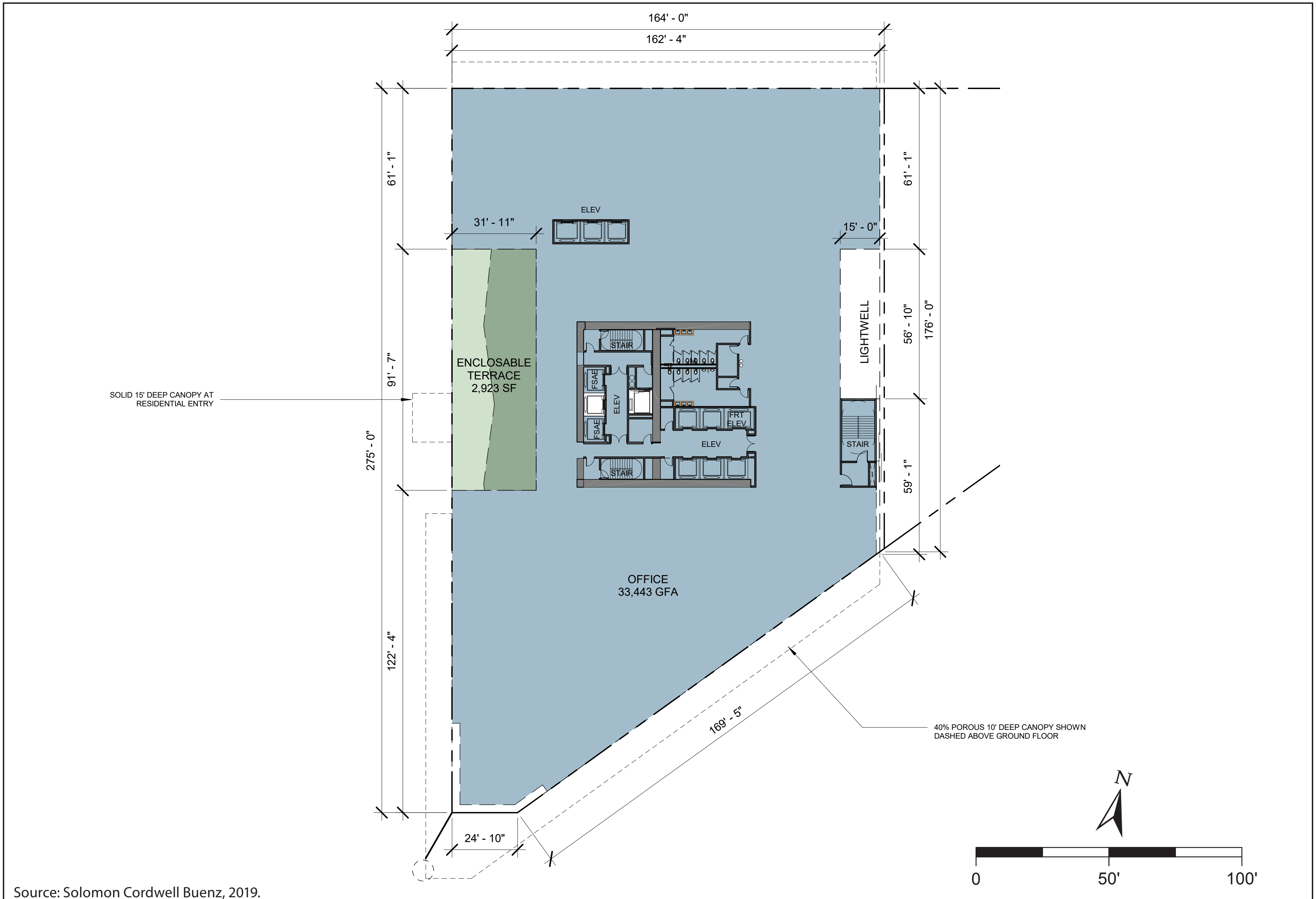
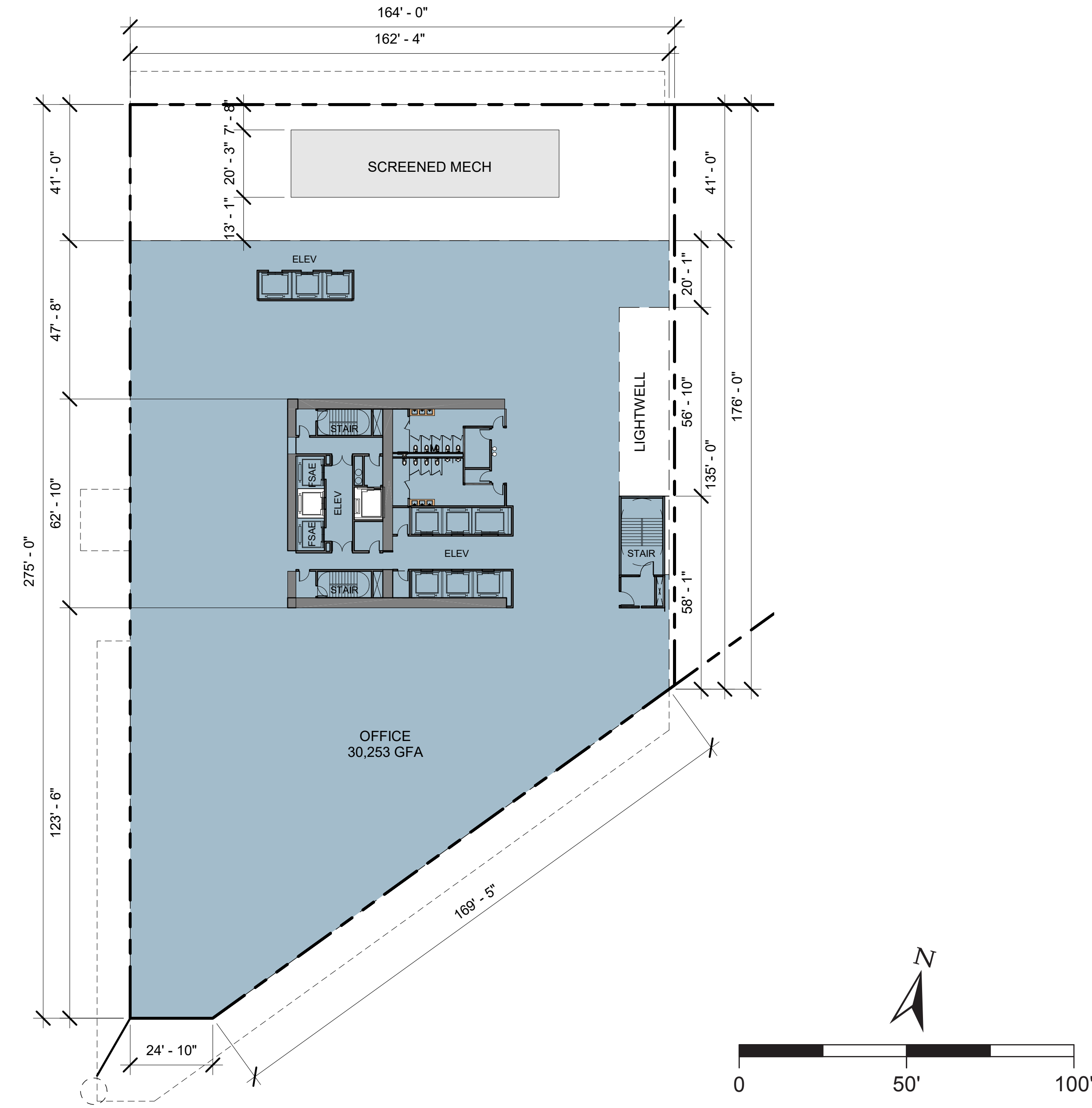


Figure 2-23
30 Van Ness Avenue Project – Proposed Ground Floor Plan



Source: Solomon Cordwell Buenz, 2019.

Figure 2-24
30 Van Ness Avenue Project – Proposed Levels 2–8 Plan



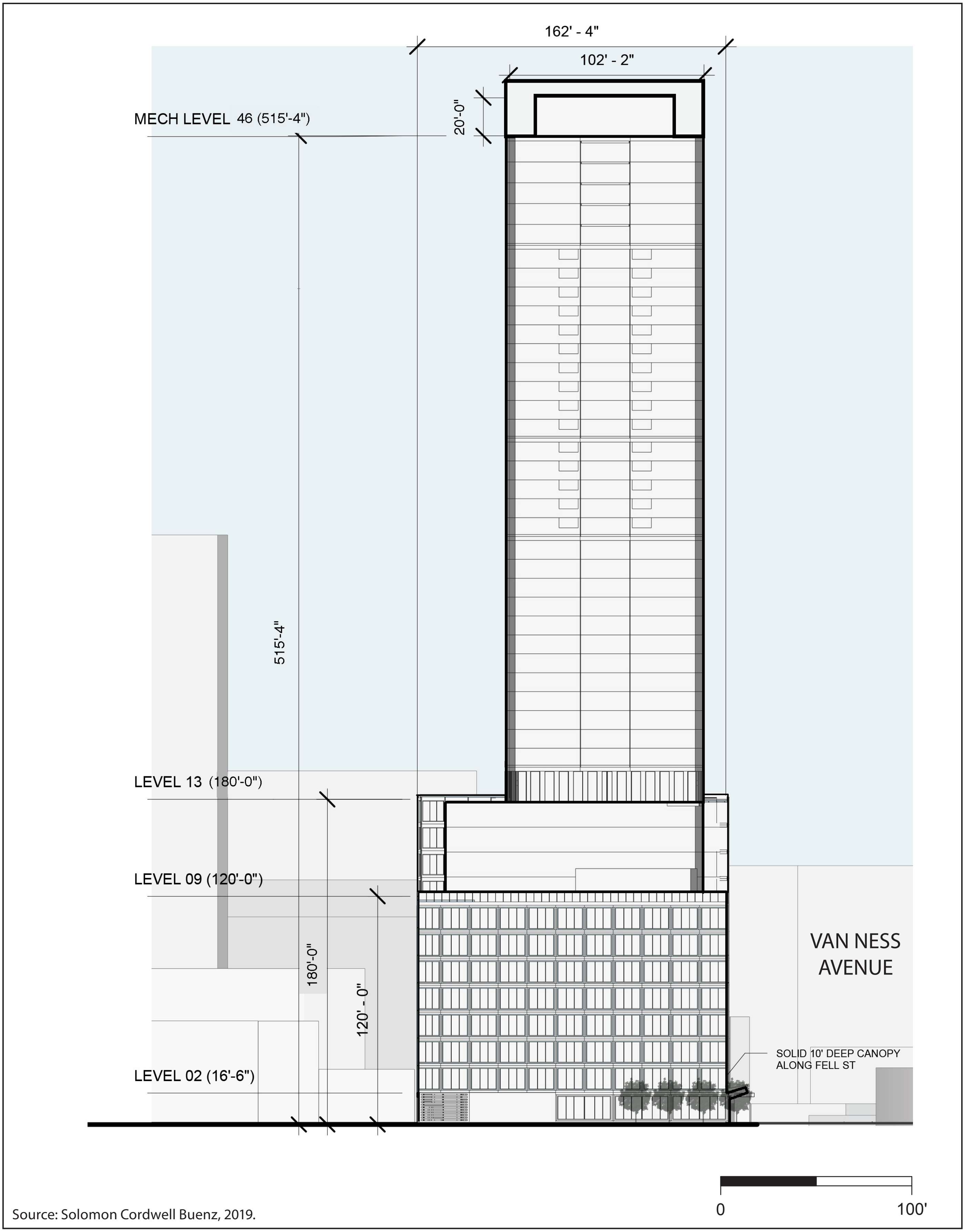
Source: Solomon Cordwell Buenz, 2019.

Figure 2-25
30 Van Ness Avenue Project – Proposed Level 9–12 Plan

Source: Solomon Cordwell Buenz, 2019.

ICF Graphics ... 00700.17 (4-12-2019)

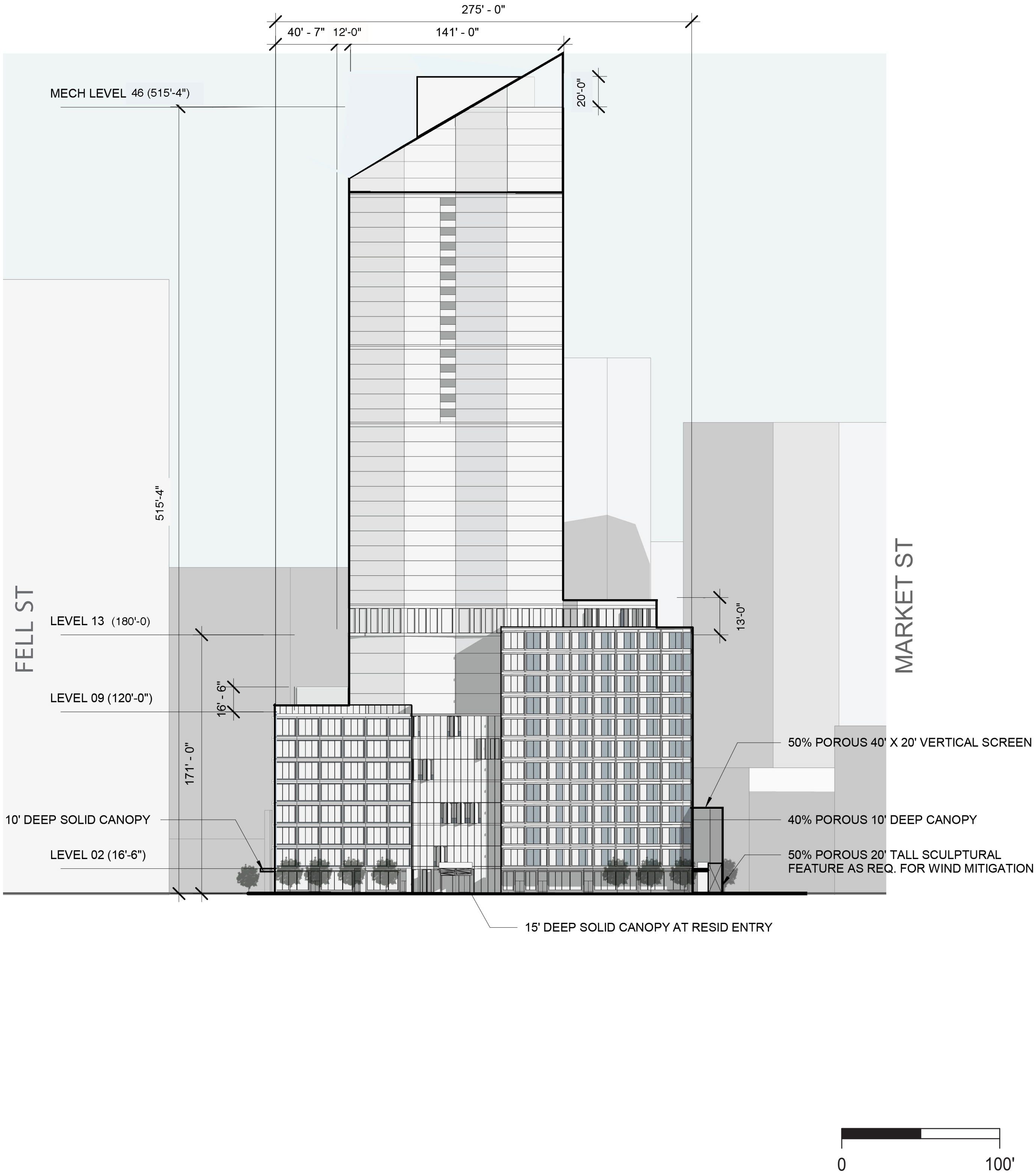
Figure 2-26
30 Van Ness Avenue Project –
Proposed Floor Plan Typical of Floor 14 through 47



Source: Solomon Cordwell Buenz, 2019.

ICF Graphics ... 00700.17 (6-3-2019)

Figure 2-27
30 Van Ness Avenue Project – Proposed North Elevation



Source: Solomon Cordwell Buenz, 2019.

ICF Graphics ... 00700.17 (6-3-2019)

Figure 2-28
30 Van Ness Avenue Project – Proposed West Elevation

Forestry. In addition, the sponsor would coordinate sidewalk improvements in accordance with streetscape and right-of-way improvements planned as part of the Better Market Street Plan, which proposes sidewalk widening along the project's frontage on Market Street and a bulb-out at the northeast corner of Market Street and Van Ness Avenue. Canopies to reduce wind impacts are also proposed along the north, south, and west sides of the building.

Proposed Parking and Circulation

Access and Circulation for Vehicles, Bicycles, and People Walking

The site for the 30 Van Ness Avenue Project would be accessible from Market Street, Van Ness Avenue, and Fell Street, as shown in **Figure 2-23**, p. 2-61. Vehicular access to the parking garage would be via a 22-foot driveway on Fell Street. People bicycling would be able to access bicycle parking via ground-floor entries on Van Ness Avenue or Market Street.

Access for people walking to the interior of the building, including the residential uses, offices, lobbies, and retail spaces, would be provided by building entrances situated on Van Ness Avenue and on Market Street. Access to the upper residential floors would be provided by an elevator and stairway located adjacent to the residential lobby entrance.

Commercial (freight and delivery service) loading demand for the building would include residential move-in/move-out vehicles; office vehicles; garbage, compost, and recycling pickup vehicles; and delivery vehicles for residents, offices, and the required active retail space at the ground floor. As shown in **Figure 2-23**, p. 2-61, commercial and passenger loading would occur within the proposed 107-foot on-street loading zone along the project frontage on Van Ness Avenue, in front of the residential lobby and retail entrance, and the 25-foot on-street loading zone along the project frontage on Fell Street. There would also be a loading dock, which would be accessed from Fell Street, with three off-street freight loading spaces (two 12- by 35-foot spaces and one 10- by 25-foot space), three off-street service loading spaces (8 by 20 feet), and a 15-foot curb cut/driveway for larger deliveries, moving trucks, and garbage, compost, and recycling pickup vehicles. The proposed on-street commercial spaces and passenger loading zones would require approval from MTA at a public hearing. A preliminary review of the proposed design and changes to on-street curb regulations by the department's Street Design Advisory Team, which included members of the MTA Color Curb Program, did not identify any concerns with the proposed zones and confirmed that the proposed on-street curb regulations would be consistent with MTA policy.

Vehicular and Bicycle Parking

The vehicular and bicycle parking proposed as part of the 30 Van Ness Avenue Project is summarized in **Table 2-3**. On-street vehicular parking and loading spaces currently exist at the project site on Van Ness Avenue and Fell Street. An existing on-street blue curb/Americans with

TABLE 2-3. PROPOSED VEHICULAR, LOADING, AND BICYCLE PARKING AT 30 VAN NESS AVENUE

	Number of Parking Spaces
Vehicular Off-Street Parking Spaces (total)[1]	243[2]
ADA	*7*
Electric-Vehicle Charging and Electric-Vehicle-Ready Spaces	*25*
Mechanical Stackers	*211*
Car-Share Spaces	*5*
Off-Street Freight Loading Spaces	3
Off-Street Service Loading Spaces	3
Bicycle Parking Spaces (total)	349
Class 1 Spaces	*301*
Class 2 Spaces	*48*

Source: 30 Van Ness Development, LLC, 2018.

[1] The project sponsor would seek a zoning change that would allow a mixed-use project in the Hub Plan area and provide at least 25% onsite (or 33% offsite) affordable housing to reallocate permitted vehicular parking spaces from nonresidential to residential land uses. Permitted vehicular parking for residential uses would be 0.25 space per unit, and permitted vehicular parking for nonresidential uses would total 7% of the occupied floor area. The total number of vehicular parking spaces would be approximately 243.

[2] Total number of vehicular parking spaces does not add up to 243 because the subsets of the 243 vehicular parking spaces overlap with each other. For example, some of the car-share spaces are proposed as mechanical stackers.

Disabilities Act–compliant vehicular parking space would be relocated from Van Ness Avenue to Fell Street. Within the two basement levels, 30 Van Ness Development, LLC, proposes a total of up to 243 vehicular parking spaces.[25] These would include seven Americans with Disabilities Act–compliant spaces, five electric-vehicle charging spaces, and 20 electric-vehicle-ready spaces.[26] In addition, the project would include an additional five car-share spaces. It is anticipated that vehicular parking would be provided by mechanical stackers. The project sponsor would seek a zoning change that would allow a mixed-use project in the Hub Plan area and provide affordable housing (i.e., at least 25 percent onsite or 33 percent offsite) to reallocate permitted vehicular parking spaces from nonresidential to residential land uses. Permitted vehicular parking for residential uses would be 0.25 space per unit, and permitted vehicular parking for nonresidential uses would total 7 percent of the occupied floor area. Also, the subterranean garage would include a gate that would open and shut, providing full enclosure. Visual and audible signals would alert passing people walking and bicycling of an approaching exiting vehicle from both the vehicular parking driveway and the loading driveway.

25 Based on a project with 610 residential units.

26 Electric-vehicle-ready spaces are parking spaces equipped with an electrical raceway, wiring, and electrical circuit for future use as electric-vehicle charging spaces.

The project would also include 301 *class 1* bicycle parking spaces and 48 *class 2* bicycle parking spaces.[27] Of the 301 class 1 bicycle parking spaces, 228 spaces would be associated with the residential units,[28] 70 spaces would be associated with the office uses, and three spaces would be associated with the retail uses. Of the 48 class 2 bicycle parking spaces, 31 spaces would be associated with the residential units, nine spaces would be associated with the office uses, and eight spaces would be associated with the retail uses. The class 1 bicycle parking spaces would be located in the basement levels and ground floor and would meet planning code requirements on specific locations and routes of travel.

Construction

Construction of the proposed project at 30 Van Ness Avenue would be completed in a single phase, commencing in 2020 and lasting approximately 44 months. Construction would occur in several overlapping stages: (1) demolition of portions of the building, (2) excavation and shoring, (3) foundation and below-grade construction, (4) base buildings, (5) exterior and interior finishing, and (6) sidewalks and landscaping. The proposed project would construct a conventional type 1 structure.[29] Steel soldier piles would be driven over approximately two to three months to the perimeter of the site for the 30 Van Ness Avenue Project as part of the temporary shoring system. If required, deep auger cast piles would be installed in the BART zone of influence[30] over four to six months, supporting a concrete mat foundation. The proposed project would be a conventional concrete structure. The vehicular parking lanes and sidewalks on Fell Street and, at a minimum, the northern portion of Van Ness Avenue adjacent to the project site would be temporarily closed during construction. During construction, the project would reroute people walking on the project sides of Fell Street and Van Ness Avenue to the opposite sides of each respective street. The Market Street sidewalk and Muni access would remain open with overhead protection and barricades for people walking to provide a safe environment. The Market Street sidewalk would be reduced to approximately 15 feet wide during the demolition and construction phases.

Typical construction equipment that would be used at the project site would include loaders, dump trucks, bulldozers, backhoes, scrapers, water trucks, trenchers, cranes, drills, forklifts, concrete trucks, welders, air compressors, hi-lift forklifts, pile hammers, rollers, pavers, temporary

---

27 Section 155.1(a) of the planning code defines class 1 bicycle spaces as "spaces in secure, weather-protected facilities intended for use as long-term, overnight, and workday bicycle storage by dwelling unit residents, nonresidential occupants, and employees" and defines class 2 bicycle spaces as "spaces located in a publicly-accessible, highly visible location intended for transient or short-term use by visitors, guests, and patrons to the building or use."

28 Based on a 610 residential unit program.

29 Type 1 structures are constructed of concrete and protected steel (steel coated with a fire-resistant material, most often a concrete mixture) and designed to hold fire for an extended amount of time to prevent it from spreading.

30 The BART zone of influence is defined as the area above a line of influence, which is a line from the critical point of BART structures at a slope of 1.5 horizontal to 1 vertical (a line sloping toward ground level).

generators, and berm machines. Construction equipment would be staged along Fell Street and Van Ness Avenue. A tower crane would be located either within the property line or within the closed sidewalk zone. Construction materials would be loaded and off-loaded in the closed vehicular parking lane on Fell Street or the northern portion of Van Ness Avenue at Fell Street, adjacent to the property. Materials would be scheduled to arrive when required in the construction sequence. All impact equipment used for project construction would be equipped with the appropriate noise control features, as required by the noise ordinance.

The approximate average number of construction workers onsite by shift would be 120, with a maximum of 250 workers during the exterior and interior finishing construction phase. Construction shifts would typically occur from 7 a.m. to 7 p.m. Monday through Saturday. In accordance with the City noise ordinance, project construction would generally not occur between the hours of 8 p.m. and 7 a.m. Activities that would result in no detectable noise at adjacent land uses, such as interior painting, would not be limited to these hours. There may be some situations where construction would need to extend beyond normal hours, such as the concrete foundation pour. However, any such exceptional condition would be subject to normal review, permitting, and approval through the Department of Building Inspection (for private property) or the San Francisco Public Works (for public rights-of-way). Examples of construction activities that may extend beyond normal hours include concrete pours, crane and hoist erection and adjustment activities, site maintenance activities, and materials delivery and handling. The mode of access for construction workers would be primarily public transit due to the site's proximity to several transit stops, although some workers could drive and park at on-street vehicular parking spaces or nearby vehicular parking garages. No dedicated vehicular parking for construction workers would be provided.

The estimated amount of excavation at the project site is 51,000 cubic yards for the foundations and basement levels, which would require excavation to a depth of approximately 48 feet below grade, all of which would be exported from the site. To accommodate this, the project would require 26 trucks onsite on average per shift per day, or 10 cubic yards per truck at 85 loads per day for eight hours per day (estimated 60 off-haul working days). Deliveries of materials during the construction phase would vary, with an anticipated average of 16 trucks per day and a peak of 50 per day, sequenced to meet construction demands.

The proposed truck route would have trucks arriving from U.S. 101 traveling north along Mission Street onto South Van Ness Avenue and arriving at the west side of the project site. The proposed off-haul route would have the trucks turn right onto Fell Street and then proceed south along 10th Street to reach the U.S. 101 onramp at the corner of Bryant and 10th streets.

The location for the disposal of spoils is yet to be determined. Clean materials may be reused, but otherwise potential destinations include the Potrero Hill Landfill, Altamont Landfill, Dumbarton Quarry, or Brisbane Baylands.

All local, state, and federal laws with respect to trucking, construction waste and spoils disposal, and dust control would be followed. Specifications would be included for dust control and spillage.

UTILITIES

The proposed project at 30 Van Ness Avenue would include all new utilities, including electrical, gas, water, fire, and sanitary sewer. No utility infrastructure upgrades, including for stormwater, are anticipated.

The San Francisco Public Utilities Commission (SFPUC) would provide electric service to the proposed project at 30 Van Ness Avenue. The SFPUC uses Pacific Gas & Electric Company's (PG&E) distribution facilities and currently designs and constructs facilities in accordance with PG&E standards. The SFPUC would serve the proposed project with a single 12-kilovolt line located in a utility trench.

The SFPUC owns and operates the existing potable water infrastructure that serves the project site. Potable water is currently delivered to the project vicinity by an 8-inch main beneath Fell Street. As part of the proposed development, new connections are proposed, most likely to the existing 8-inch main beneath Fell Street. The project may also include the installation of an onsite system of 12-inch high-pressure water pipes to connect to the City's existing Auxiliary Water Supply System or an alternative solution, as coordinated with the SFPUC.

The project would be designed with a range of standard and best practices for recycling, compost, and waste management and in compliance with applicable codes.

The proposed project at 30 Van Ness Avenue would reduce the amount of impervious (hardscape) surfaces on the site by removing the existing impervious surfaces and adding approximately 1,000 to 2,000 square feet of permeable surfaces, such as grass, gravel, and permeable pavers. The proposed project would comply with City stormwater management and nonpotable water ordinances, most likely through some combination of (but not limited to) bioretention flow-through planters on the podium level, and a rainwater harvesting cistern.

The proposed project at 30 Van Ness Avenue would include two emergency generators to supply electricity to the building and facilities during a power outage; the generators would be located on level 9, on top of a 120 foot podium.[31] Based on standards established by the Bay Area Air Quality Management District, the generators would be a diesel 1,500-horsepower unit, operating to a maximum of 40 hours per year of non-emergency testing each.

31 For purposes of the air quality analysis, emergency generators were modeled conservatively, assuming a location with a podium height of 120 feet.

The goal for the overall development of a sustainable design at 30 Van Ness Avenue includes compliance with Leadership in Energy and Environmental Design (LEED) standards for all commercial and residential development onsite, as outlined in the San Francisco Green Building Code and other City codes. In compliance with City and state requirements, the building is anticipated to include five electric-vehicle charging spaces in the garage as well as 20 electric-vehicle-ready spaces. Furthermore, the proposed project would meet all City requirements, including compliance with GreenPoint or LEED Gold standards. The building envelope as well as the heating, ventilation, and air-conditioning systems would be designed and optimized together to improve energy efficiency, thermal comfort, and natural lighting.

98 Franklin Street Project

The proposed project at 98 Franklin Street includes demolition of the existing surface vehicular parking lot and construction of a 31-story residential tower above a five-story podium that would serve as the new high school for International High School (grades 9 through 12 of FAIS). The project sponsor for the 98 Franklin Street Project is a partnership between Related California and the FAIS. The following sections describe the characteristics of the proposed project in detail.

Site Design and Layout

The proposed project at 98 Franklin Street would include a residential tower above a school podium building with a proposed height of up to 365 feet. The L-shaped building would have frontages along Franklin, Oak, and Market streets. The podium (floors 1 through 5) would be constructed to the lot lines, while the tower (floors 6 through 36) would be set back about 0 to 10 feet from Franklin Street, about 0 to 10 feet from Oak Street, and about 150 feet from Market Street. The tower would be situated in the northwest portion of the site. The podium would be approximately 68 feet tall at the roofline. The 31-story tower would extend up to approximately 365 feet in height to the roofline. A parapet would extend an additional 20 feet above the roofline, as permitted by the planning code. The podium would be approximately 142 feet long by 125 feet wide, while the tower would be approximately 130 feet long by 110 feet wide.

Proposed Development

As summarized in **Table 2-4**, development at 98 Franklin Street would total approximately 510,000 square feet, including a mix of approximately 384,100 square feet of market-rate and affordable residential uses, approximately 3,100 square feet of retail uses, and approximately 81,000 square feet of school uses. In addition, the site for the 98 Franklin Street Project would include approximately 41,800 square feet of new garage uses (i.e., 111 vehicular parking spaces) within one below-grade level containing bicycle parking, loading, and other building services and two below-grade garage levels containing vehicular parking. The development

TABLE 2-4. PROPOSED DEVELOPMENT AT 98 FRANKLIN STREET

	Count	Gross Square Feet
Residential Units (total)	345	384,100
Studio	*172*	—
One-Bedroom Units	*86*	—
Two-Bedroom Units	*54*	—
Three-Bedroom Units	*33*	—
Retail	—	3,100
School	36 classrooms	81,000
Garage Parking (Vehicular)	111 spaces	41,800
Open Space		33,940
Commonly Accessible Open Space (Residential/ Not Publicly Accessible)	—	*22,400*
Private Open Space (School)	—	11,530
Privately Owned Public Open Space	—	0

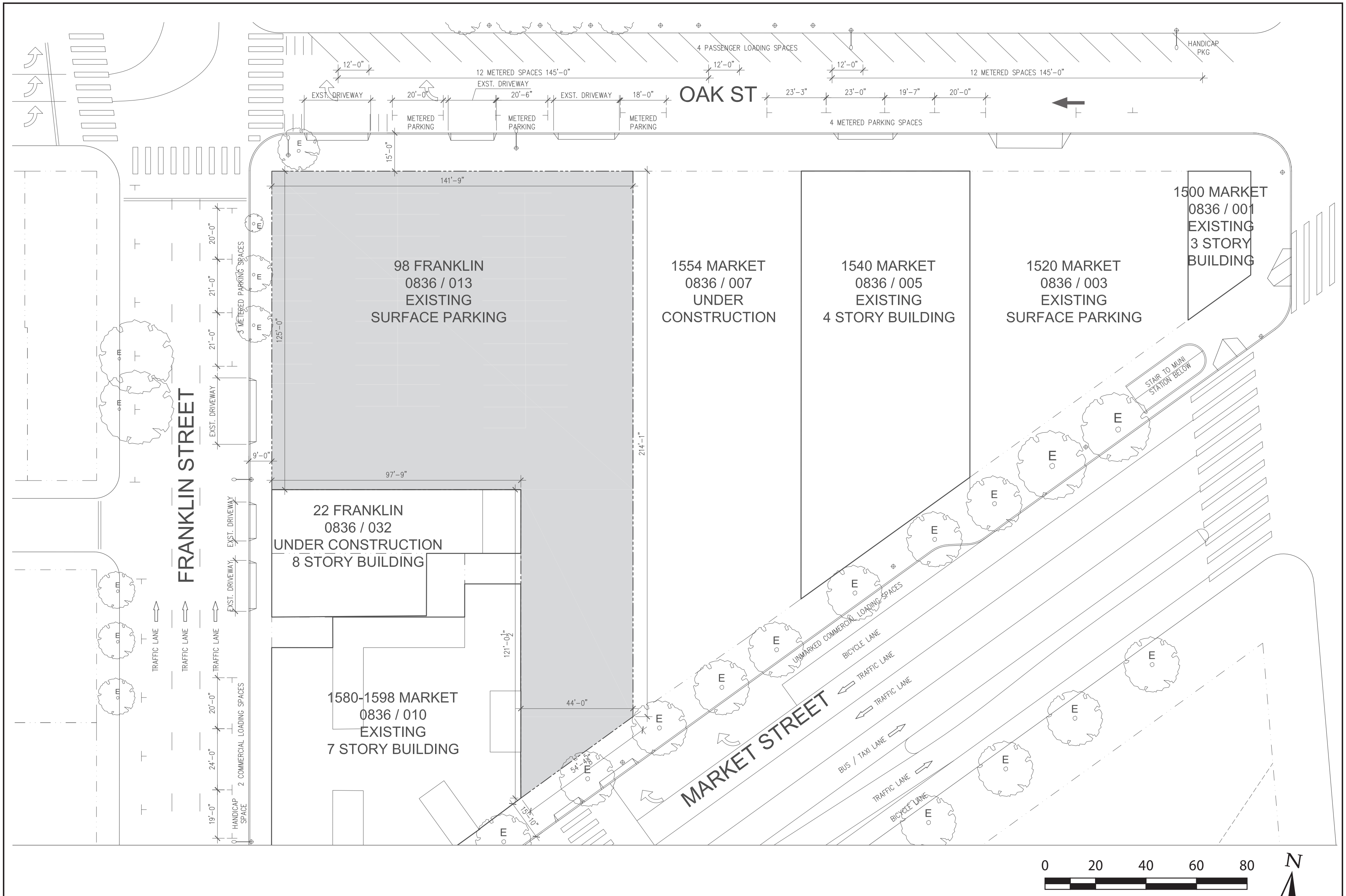
Source: Skidmore, Owings & Merrill 2018.

at 98 Franklin Street would accommodate the approximately 380 existing students who would be relocated from the FAIS's 150 Oak Street site; when completed, the development would accommodate up to 440 students at the site for the 98 Franklin Street Project. The approximately 81,000 square feet of new school space would be located within the building podium and occupied by new facilities for the International High School (grades 9 through 12 of the FAIS). The 98 Franklin Street Project would also result in the addition of up to five staff members, for a total of 65 staff members at the high school at the project site.

The 98 Franklin Street Project would also include 345 apartment units with the following unit mix: 172 studios (50 percent), 86 one-bedroom units (25 percent), 54 two-bedroom units (15 percent), and 33 three-bedroom units (10 percent). Eighteen percent of the residential units would be affordable units.

The 98 Franklin Street Project would include retail space for a restaurant (e.g., café) on the ground floor. The podium would include a private two-story indoor open space for residential and school uses, a residential lobby, and a multi-purpose assembly room on the ground floor. The podium would also include administration offices and a student center on level 2. The upper levels of the podium would include a library, private outdoor open spaces for school uses, a roof terrace for school uses, offices for faculty and administration, and classrooms.

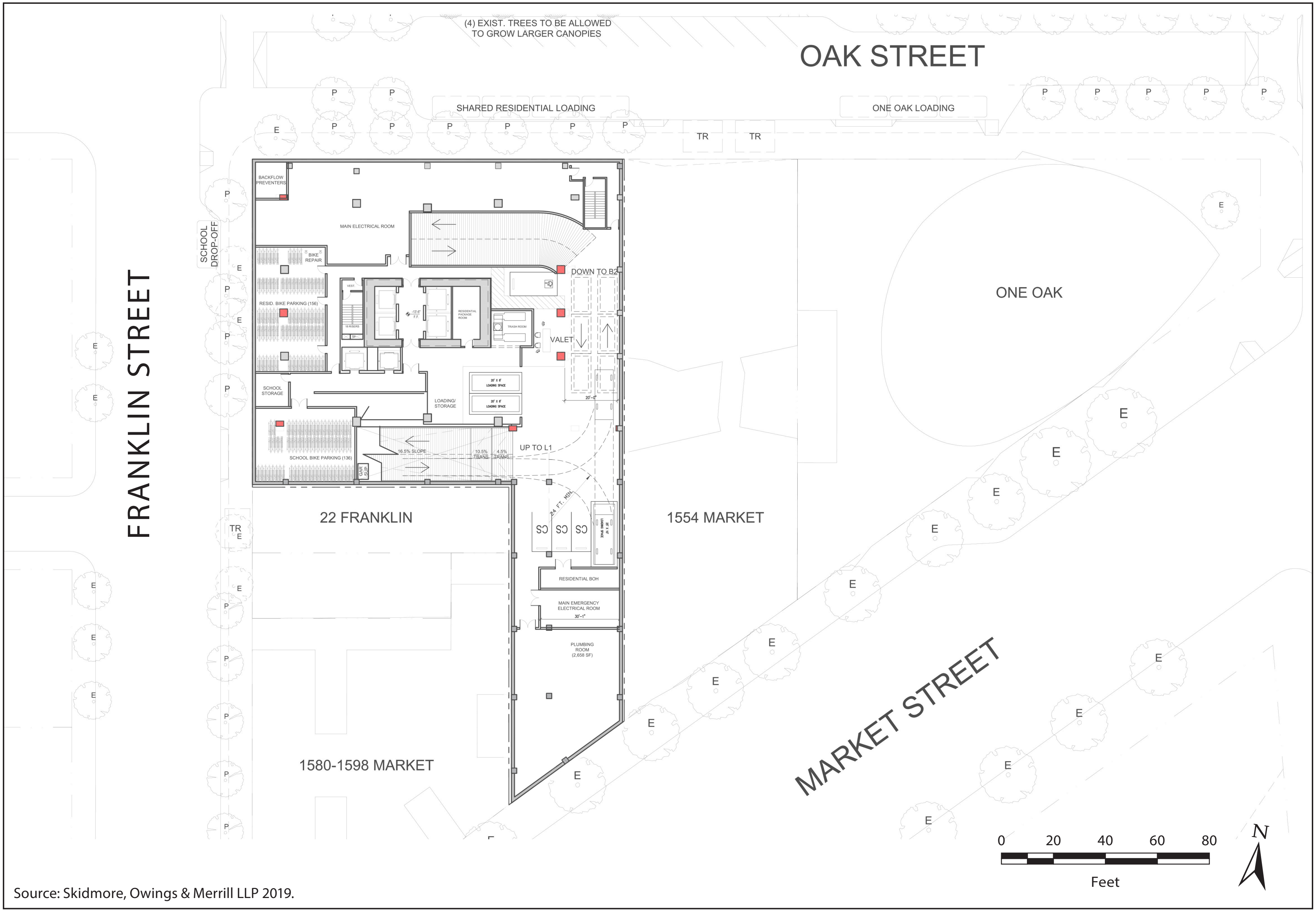
The residential tower would include a mix of residential unit sizes. **Figure 2-29** shows the existing site plan. **Figures 2-30 to 2-36**, pp. 2-75 to 2-81, show the proposed development on the basement levels, ground-floor level, level 2, level 3, lower tower, and upper tower. **Figure 2-37**, p. 2-82, show the proposed west/north elevations.



Source: Skidmore, Owings & Merrill LLP 2019.

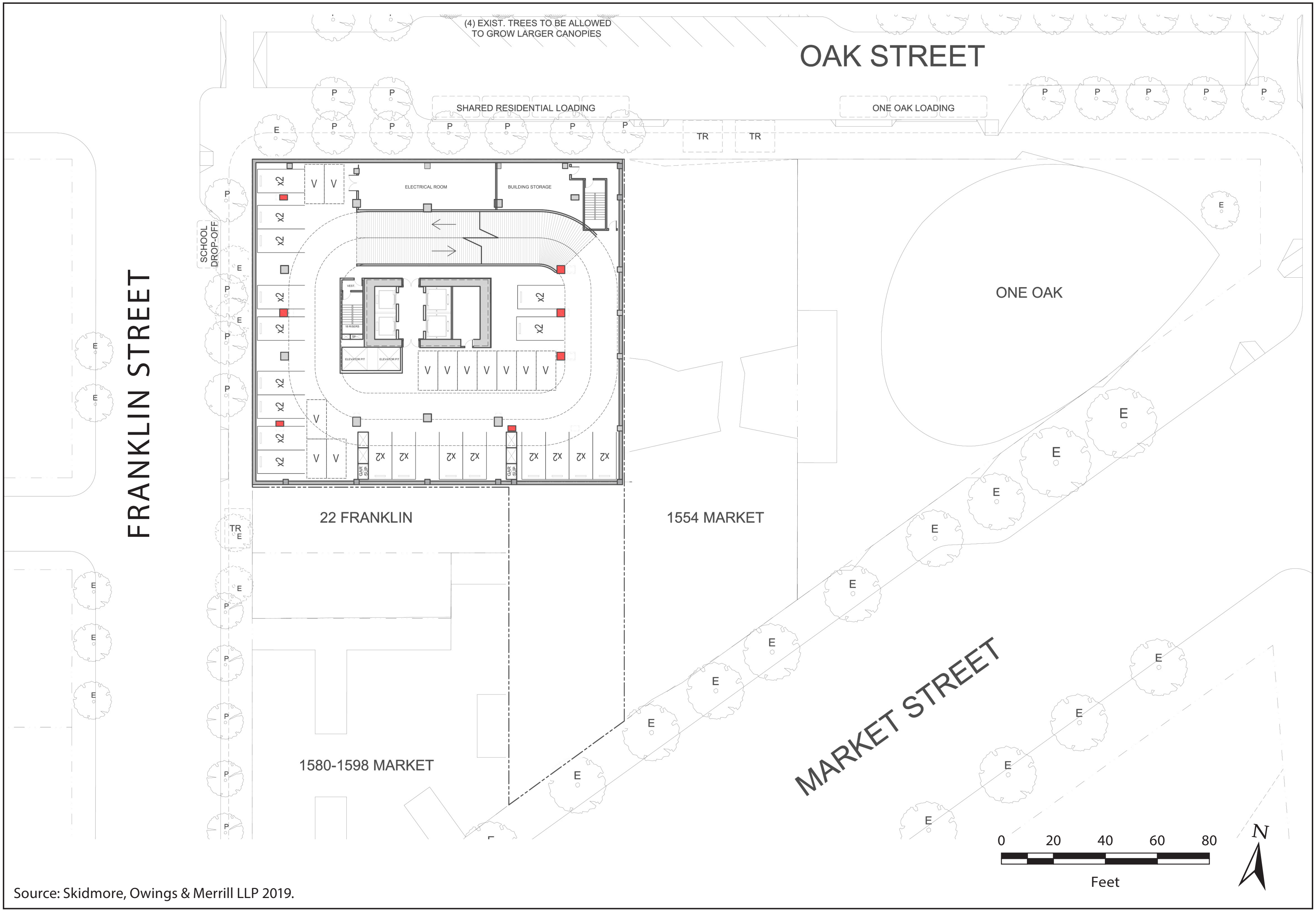
ICF Graphics ... 00700.17 (6-3-2019)

Figure 2-29
98 Franklin Street Project – Existing Site Plan



Source: Skidmore, Owings & Merrill LLP 2019.

Figure 2-30
98 Franklin Street Project – Proposed Basement Level 1 Plan



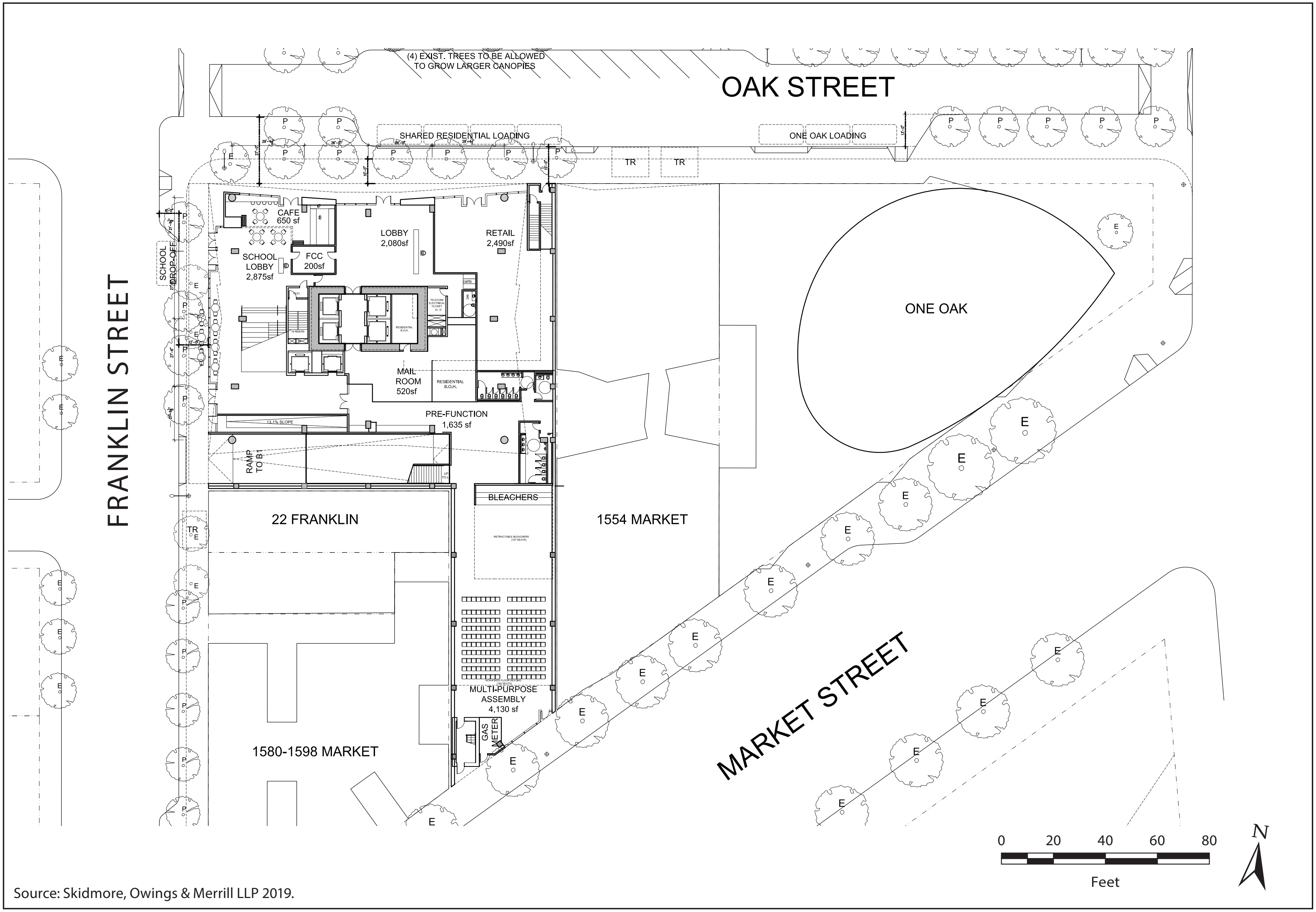
Source: Skidmore, Owings & Merrill LLP 2019.

ICF Graphics ... 00700.17 (3-6-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

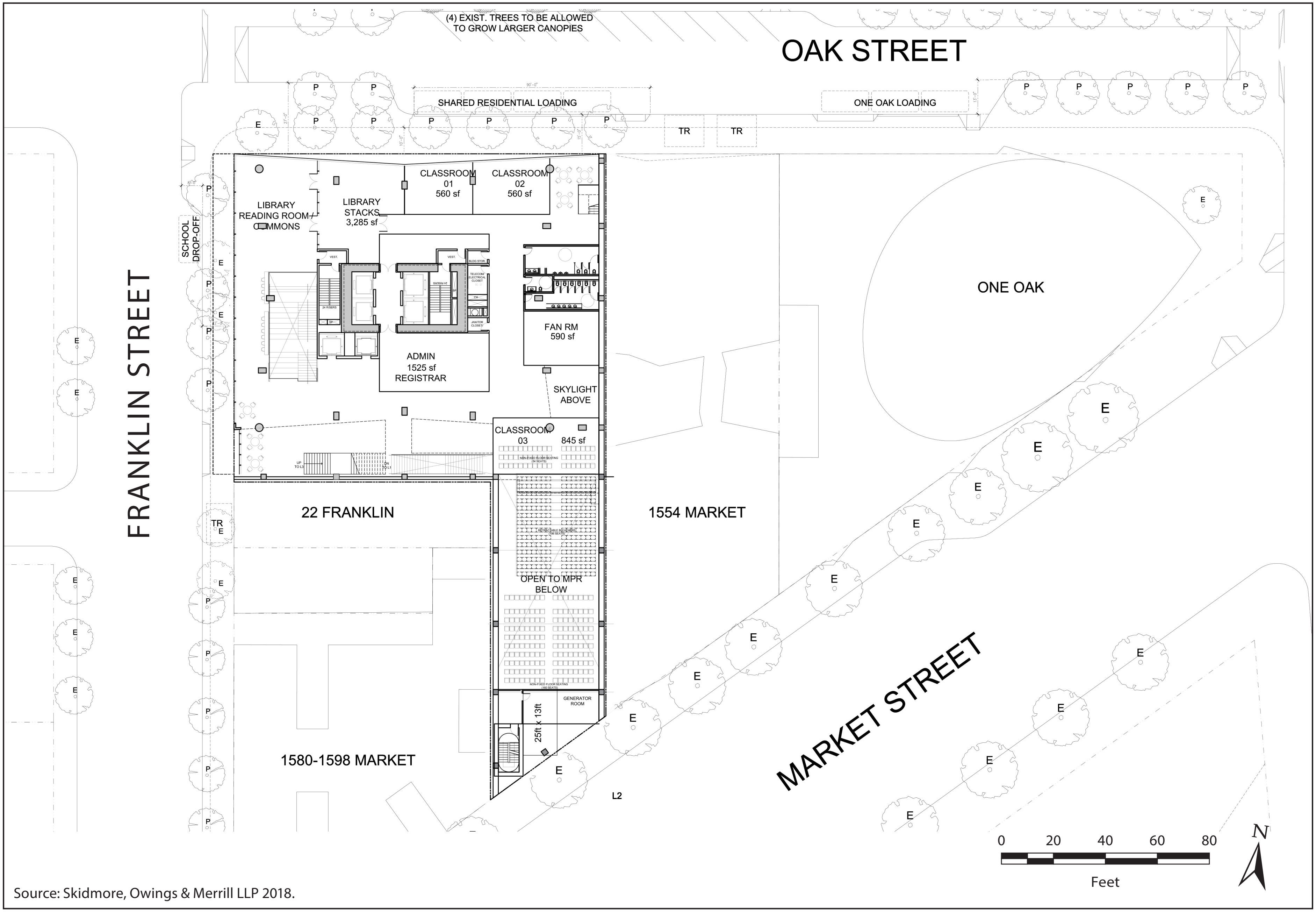
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 2-31
98 Franklin Street Project –
Proposed Basement Level 2 and 3 Plan



Source: Skidmore, Owings & Merrill LLP 2019.

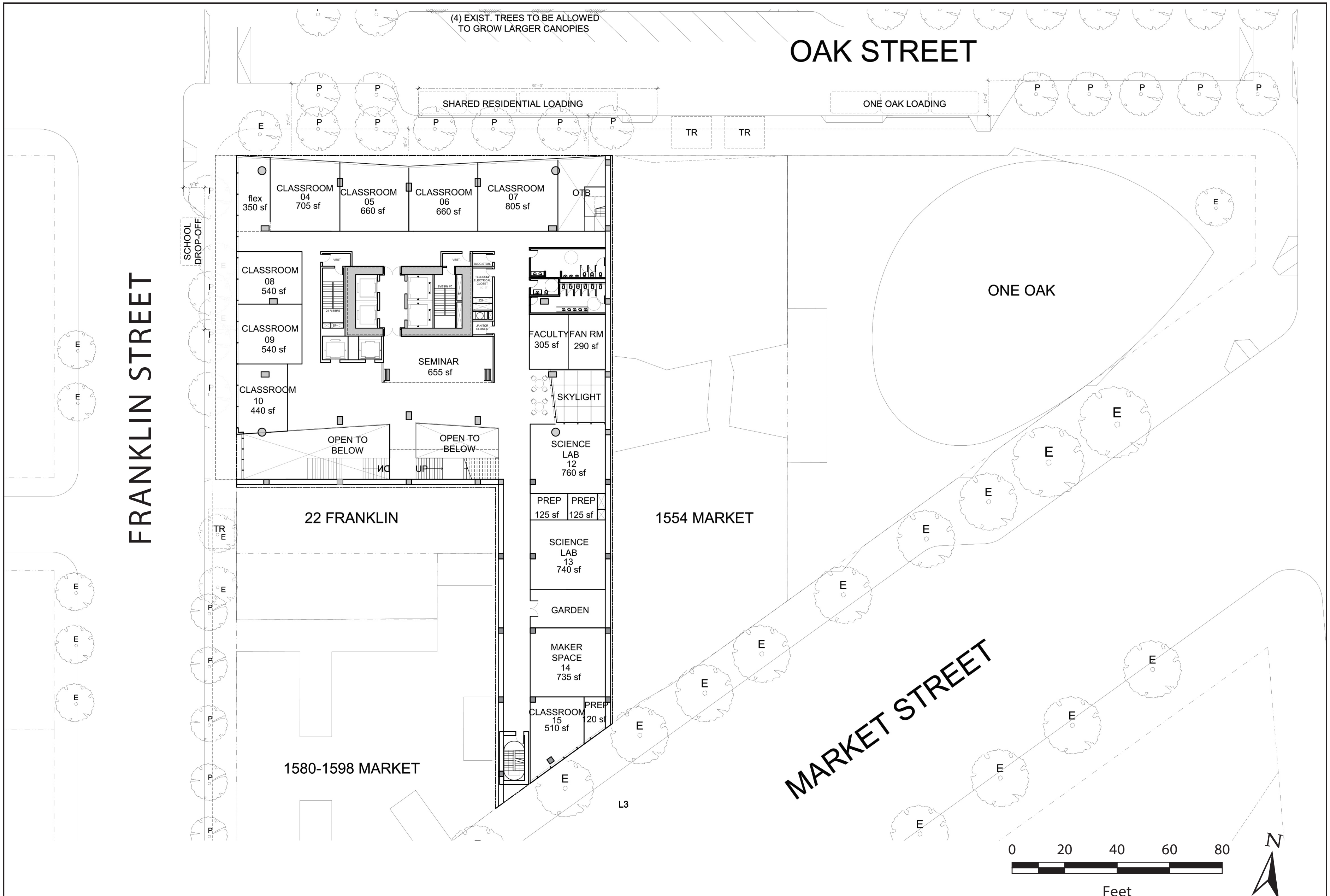
Figure 2-32
98 Franklin Street Project – Proposed Ground Floor Plan



Source: Skidmore, Owings & Merrill LLP 2018.

ICF Graphics ... 00700.17 (1-24-2019)

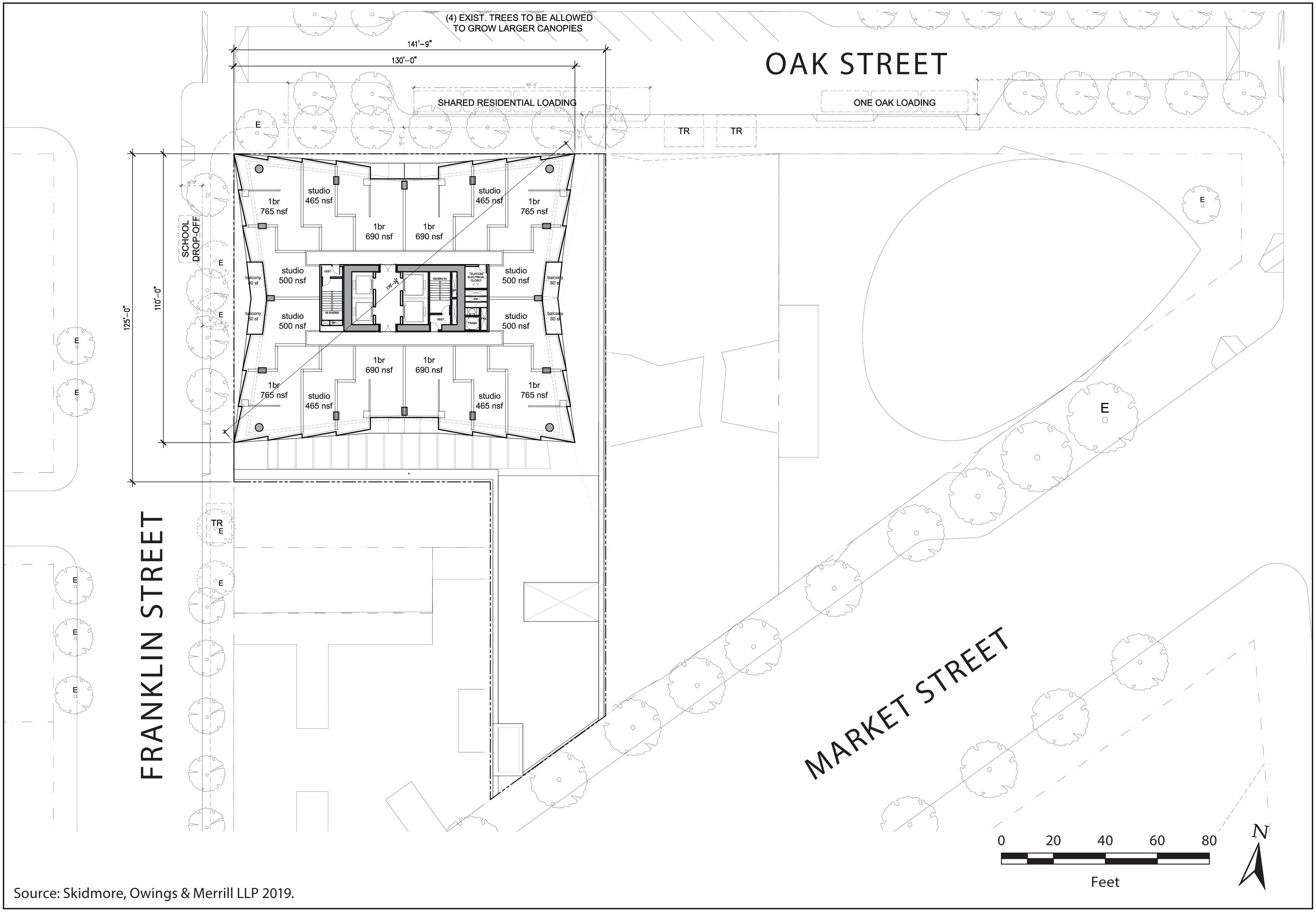
Figure 2-33
98 Franklin Street Project – Proposed 2nd Level Floor Plan



Source: Skidmore, Owings & Merrill LLP 2019.

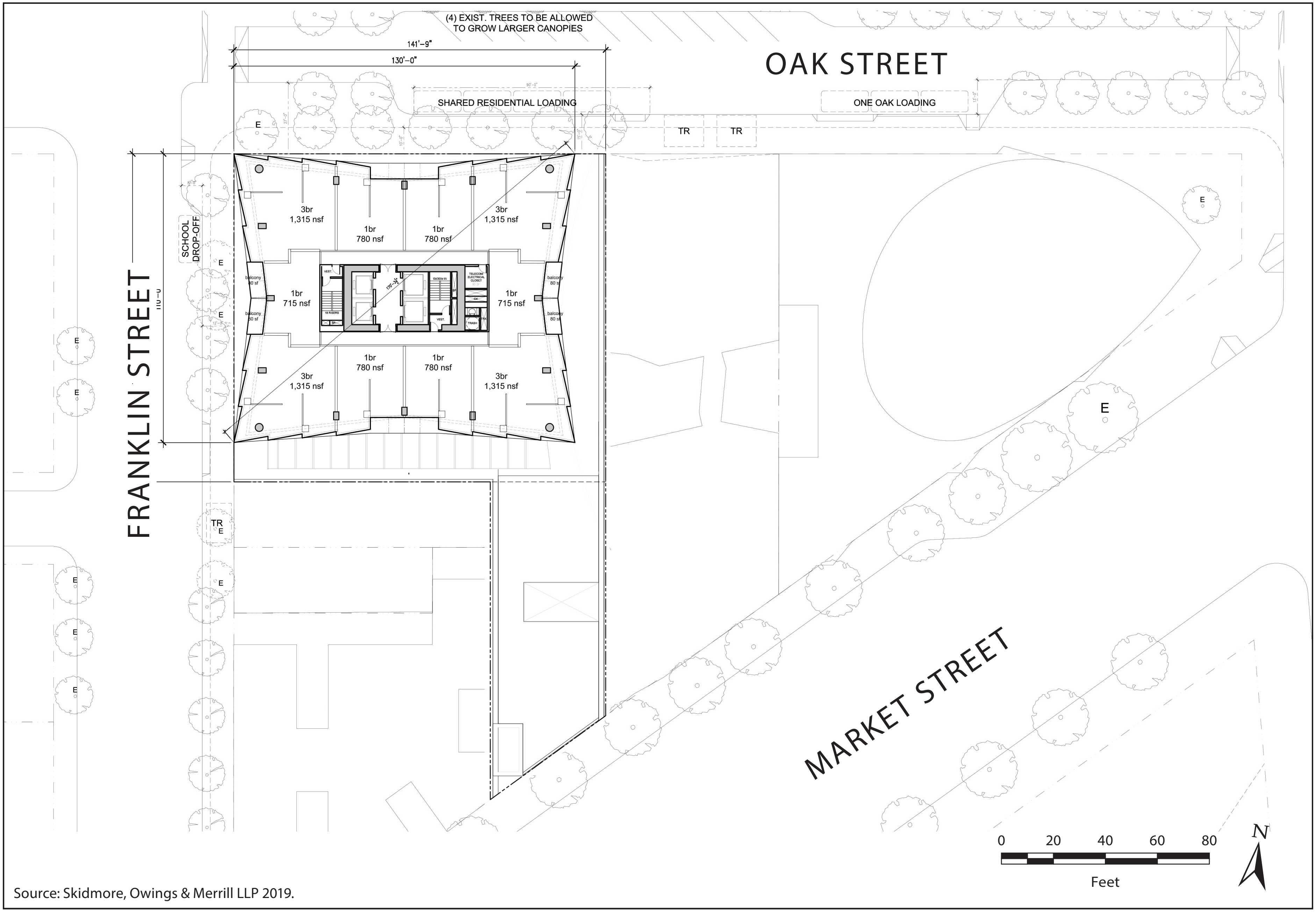
ICF Graphics ... 00700.17 (1-24-2019)

Figure 2-34
98 Franklin Street Project – Proposed 3rd Level Floor Plan



Source: Skidmore, Owings & Merrill LLP 2019.

Figure 2-35
98 Franklin Street Project – Proposed Lower Tower Floor Plan



Source: Skidmore, Owings & Merrill LLP 2019.

ICF Graphics ... 00700.17 (1-24-2019)

Figure 2-36
98 Franklin Street Project – Proposed Upper Tower Floor Plan

Source: Skidmore, Owings & Merrill LLP 2019.

ICF Graphics ... 00700.17 (1-24-2019)

Figure 2-37
98 Franklin Street Project – Proposed West and North Elevations

The proposed project would comply with all San Francisco lighting and sign requirements. The residential entrance would have standard security features, including card key access at certain times of day. The International High School (grades 9-12 of FAIS) would include a security desk, security employees, and traffic crossing guards for all ways (modes) people travel on Franklin and Oak streets. The school, residential uses, and retail uses would have approximately 14 new employees.

Proposed Open Space

The proposed project at 98 Franklin Street would include approximately 11,530 square feet of open space for the school, including a roof terrace (level 5) and other open spaces throughout the podium levels (5,000 square feet). For residential uses, a total of 22,400 square feet of commonly accessible open space would be located on the ground floor and in the tower, including a roof terrace and amenity-level open space on level 6 (6,530 square feet). These proposed open space areas are shown in **Figures 2-32** to **2-36**, pp. 2-77 to 2-81. None of the proposed open space areas would include permanent sound amplification systems. Any noise at outdoor open space areas would be limited in order to not be in excess of noise ordinance requirements.

The project would retain the one tree currently existing on the adjacent sidewalk and streetscape along Market Street and replace the three trees on the adjacent sidewalk and streetscape along Franklin and Oak streets. Approximately 17 additional street trees would be planted on Franklin and Oak streets. In addition, a canopy to reduce wind impacts is proposed along the north façade of the building.

Proposed Parking and Circulation

Access and Circulation for Vehicles, Bicycles, and People Walking

The project site would be accessible from Franklin, Oak, and Market streets. Vehicular access to the parking garage would be via a 20-foot driveway on Franklin Street. Residential vehicular valet pickup and drop-off would be inside the parking garage on basement level 1. People bicycling could access the parking garage from the same driveway that vehicles use on Oak Street or use the entrances on Franklin or Oak streets.

Access for people walking to the interior of the building, including to the residential uses, management and residential services offices, school areas, and open space areas, would be provided by the residential lobby situated on Oak Street or the entrances along Franklin Street. Access to the upper-level school uses and residential floors would be provided by an elevator and stairway located adjacent to the lobby entrance on Oak Street.

Commercial loading demand (freight and delivery service) for the building would include residential moving trucks; garbage, compost, and recycling pickup vehicles; and delivery vehicles to residents, school spaces, and the retail space. Loading would occur within one off-street truck loading space (10 by 25 feet) for freight and two off-street service-vehicle spaces (8 by 20 feet) in basement level 1 (from Franklin Street); however, garbage, compost, and recycling pickup could also occur on Franklin Street. Trucks would be able to park within the off-street loading dock, which would allow delivery personnel to access the residential, school, and retail uses when making deliveries. Larger residential moving vehicles would be accommodated on either Franklin Street or Oak Street by obtaining permits from MTA to use on-street vehicular parking and/or loading spaces. The garage/basement levels would be secured and accessible only to residents and retail operators.

The project proposes to provide white-curb loading zones on both Franklin and Oak streets. The 75-foot loading zone on Franklin Street would accommodate one vehicle for school-related loading but would be used only for special events. No students would regularly be dropped off or picked up at 98 Franklin Street. Parents would be instructed to drop off students in the existing white zones on Oak Street (between Franklin and Gough streets) and on Hickory Street (between Franklin and Gough streets), consistent with the school's current pickup and drop-off plan. In addition, the project proposes a 75-foot loading zone along Oak Street that would accommodate three vehicles for residential passenger loading adjacent to the building's residential lobby.

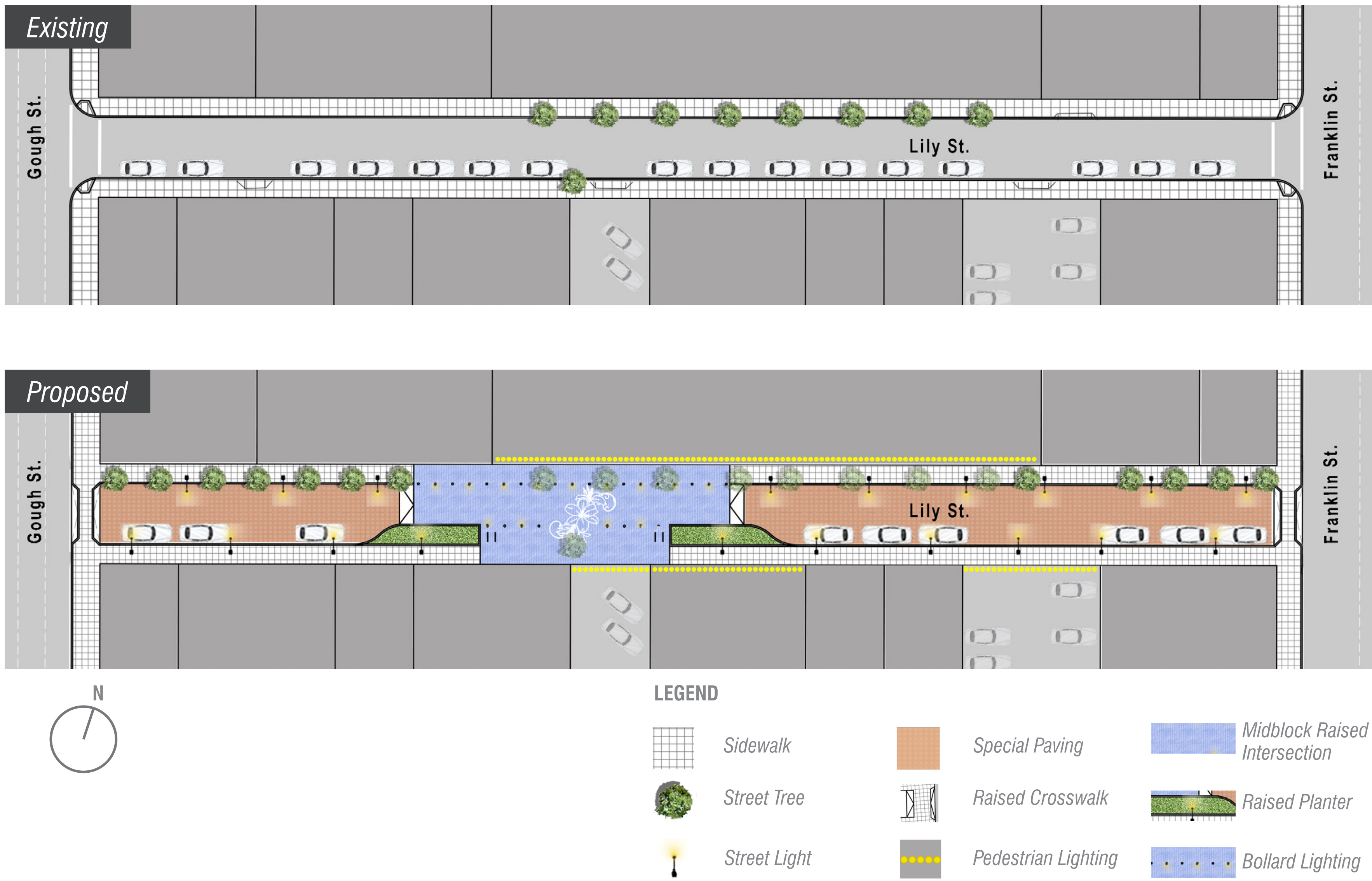
The project also proposes to widen the travel lanes adjacent to the project site to a minimum of 20 feet wide to accommodate emergency vehicles. In addition, a raised crosswalk would be added at Oak Street on the east leg of the intersection of Franklin and Oak streets.

Lily Street: Franklin Street to Gough Street

The project sponsor for the 98 Franklin Street Project proposed improvements at Lily Street from Gough Street to Franklin Street, as shown in **Figure 2-38,** including the following:

1. Add a mid-block raised intersection to connect the two FAIS properties and integrate with high-quality paving, artwork, bollards, landscaped bulb-outs, and other place-making and vehicular traffic-calming elements.
2. Add raised crosswalks at the Franklin Street and Gough Street ends of the alley.
3. Add high-quality paving in the roadway.
4. Add trees, bollards, and lighting for people walking.

These improvements would be made by the 98 Franklin Street Project only if the Planning Commission approves an in-kind fee waiver for the cost of the improvements and such improvements are approved by Public Works.



Source: San Francisco Planning Department, 2018.

ICF Graphics ... 00700.17 (11-14-2018)

Figure 2-38
Lily Street: Franklin Street to Gough Street

VEHICULAR AND BICYCLE PARKING

Vehicular and bicycle parking proposed as part of the 98 Franklin Street Project is summarized in **Table 2-5** and shown in **Figures 2-30 through 2-32,** pp. 2-75 to 2-77. No on-street vehicular parking would be provided as part of the proposed project. The project would remove some on-street vehicular parking at the intersection of Oak and Franklin streets to create a bulb-out and convert any remaining curb space along the project site to loading zones. Within the basement level of 98 Franklin Street, a total of 111 vehicular parking spaces would be provided, 82 spaces for residential uses and 29 spaces for school uses. The project would also provide three car-share spaces and one Americans with Disabilities Act-compliant space. All residential vehicular parking would be operated by a valet. The project would also include 345 class 1 bicycle parking spaces in basement level 1 for residential uses and 144 class 1 bicycle parking spaces for school uses in basement level 1. Both the residential and school bicycle parking could be accessed from a separate ramp adjacent to the vehicular access ramp or the elevator in the residential and building lobbies. On the adjacent sidewalk, on either Oak or Franklin Street, or both, 17 class 2 bicycle spaces would be provided for the residential uses and 36 class 2 bicycle parking spaces would be provided for the school.

TABLE 2-5. PROPOSED VEHICULAR, LOADING, AND BICYCLE PARKING AT 98 FRANKLIN STREET

	Number of Parking Spaces
Vehicular Off-Street Parking Spaces (total)	108
ADA	*1*
SF Compact/Standard	*104*
Car-Share Spaces	*3*
Service Vehicle Loading Spaces	3
Bicycle Parking Spaces (total)	539
Class 1 Spaces	*489*
Class 2 Spaces	*50*

Source: Skidmore, Owings & Merrill LLP 2018.

CONSTRUCTION

Construction of the proposed project at 98 Franklin Street would occur in a single phase lasting approximately 27 months, from 2021 to 2023, and consisting of several stages: (1) demolition, (2) shoring, (3) excavation, (4) foundation and below-grade construction, (5) above-grade structure, (6) exterior finishing, (7) interior finishing, and (8) sidewalks and landscaping. The project would construct a Type 1 structure[32] with a mat slab foundation to support the building.

The vehicular parking lane on all three frontages of the project site—Franklin, Oak, and Market streets, would be closed for the duration of construction of the above-grade structure (until

[32] Type 1 structures are constructed of concrete and protected steel (steel coated with a fire-resistant material, most often a concrete mixture) and designed to hold fire for an extended amount of time to prevent the spread of a fire.

interior elevators are operational). Construction activities may also require temporary travel-lane closures of the easternmost travel lane on Franklin Street approximately twice per week for about 12 months, until the interior elevators in the above-grade structure are operational. Franklin and Oak streets would be used for unloading during project construction. It is anticipated that a portion of the sidewalks adjacent to the project site on Franklin and Oak streets would be closed for the duration of construction. People walking would be directed to the opposite sides of the street. On Market Street, it is anticipated that a protected walkway for people walking would be provided within the remaining sidewalk. Sidewalks would be used as laydown/staging areas during project construction. People walking would be rerouted across the streets at intersections.

Typical construction equipment that would be used at the project site would include dozers, dump trucks, excavators, pile hammers, concrete pump trucks, augers, cranes, and air compressors. Construction equipment would be staged either on the project site or along Franklin Street. Large equipment (e.g., tower crane) would be staged on the project site. Construction materials would be loaded and off-loaded using the closed vehicular parking lane and closed eastern vehicular traffic lane on Franklin Street as well as the closed vehicular parking lane on Oak Street. Materials would be scheduled to arrive when required in the construction sequence. All impact equipment used for project construction would be equipped with the appropriate noise control features, as required by the noise ordinance.

For vehicles, the construction team would occupy the vehicular parking lanes on all frontages and the easternmost vehicular traffic lane on Franklin Street for the period of time between when above-grade structure commences to when the interior elevators are operational. There would be periodic lane closure requests in addition to the aforementioned closures; however, the project would endeavor to minimize the vehicular traffic effects to the extent possible.

There would be up to three shifts for construction workers on weekdays and weekends: regular shift (6 a.m. to 3 p.m.), swing shift (3 p.m. to 11 p.m.), and night shift (11 p.m. to 7 a.m.).[33] An exception to the noise ordinance would need to be approved for the project by the Department of Building Inspection (private property) or San Francisco Public Works (public rights-of-way) to allow project construction to occur between the hours of 8 p.m. and 7 a.m. Activities that would result in no detectable noise at adjacent land uses, such as interior painting, would not be limited to the hours of 7 a.m. to 8 p.m. and would be able to occur at night. During the regular shift, which would include the most construction workers, there would be an average of 200 workers onsite, with a maximum of 350 workers onsite during the interior finishing construction phase. The mode of access for construction workers would be primarily public transit because of the site’s proximity to several transit stops, although some workers could drive and park at on-street

[33] If the building uses pre-cast façade materials, the pre-cast materials would be delivered during evening and early morning hours, potentially until 7 a.m., which would cause a one-hour overlap. This overlap would occur only during the portion of construction when delivery of the pre-cast materials occurs, which is a subset of the overall construction schedule.

vehicular parking spaces or nearby vehicular parking garages. No dedicated construction worker vehicular parking would be provided.

The project would excavate approximately 31,670 cubic yards of material at the site, all of which would be exported, to a depth of up to 39 feet below grade. To accommodate this, the project would require 60 trucks onsite on average per shift per day and a maximum of 90 trucks onsite per shift per day during excavation. The project would also require 550 truck trips over one 14-hour period on a weekend during the tower mat concrete pour. The proposed haul route for the excavated soil would have trucks arrive at the project site via northbound U.S. 101 and either (1) continue north on Octavia Boulevard, turn right on Oak Street eastbound, to Franklin Street northbound, to Fell Street eastbound, to Van Ness Avenue southbound to Oak Street eastbound, or (2) continue north on Octavia Boulevard, turn right on Page Street, and turn left on Franklin Street. Any soil removed from the project site would be trucked to an appropriate landfill following testing pursuant to City and state requirements for hazardous materials. All local, state, and federal laws with respect to trucking and dust control (e.g., watering down the site, washing off truck tires, tarping truck loads) would be followed, and specifications would be included for dust control, construction waste and spoils disposal, and spillage.

UTILITIES

There is currently no utility infrastructure that serves the project site. The SFPUC would provide electric service to the proposed project at 98 Franklin Street. The SFPUC uses PG&E's distribution facilities and designs and constructs facilities in accordance with PG&E standards. The SFPUC would serve the proposed project with a single 12-kilovolt line located in a utility trench.

Potable water is provided by the SFPUC to the project site by an existing water main located within Market Street. With proposed project development onsite, at least one new connection to the existing water main beneath Market Street is proposed. The project may also include the installation of an onsite system of high-pressure water pipes to connect to the City's existing Auxiliary Water Supply System or an alternative solution, as coordinated with the SFPUC.

The San Francisco Stormwater Management Ordinance (as codified in section 147 of the San Francisco Public Works Code) requires that new and redevelopment projects that create and/or replace at least 5,000 square feet of impervious surface implement requirements for managing post-construction stormwater runoff consistent with the Stormwater Management Requirements and Design Guidelines. Sites with existing imperviousness of greater than 50 percent (such as the project site) are required to be designed such that stormwater runoff rate and volume not exceed pre-development conditions for the one- and two-year, 24-hour design storm. Compliance with the Stormwater Management Requirements and Design Guidelines would ensure that stormwater generated by the proposed project would not contribute additional volumes of polluted runoff to the City's stormwater infrastructure.

The entire project site is covered in impervious surfaces. The proposed project at 98 Franklin Street would result in a similar amount of impervious (hardscape) surfaces on the site by removing the existing surface vehicular parking lot and developing the site with a building that would not include any permeable surfaces. Stormwater flows and retention would meet existing requirements and be accommodated through onsite rainwater and stormwater collection features that would detain rainwater and stormwater. The proposed project would also provide new plantings and street trees on Franklin, Oak, and Market streets, in accordance with the Better Streets Plan. The proposed project would conform to the stormwater management requirements imposed by the SFPUC and any other regulatory body (i.e., Regional Water Quality Control Board).

The proposed project at 98 Franklin Street would include one emergency generator to supply electricity to the building and facilities during a power outage. It would be located on the roof of level 2, venting out through level 5. The emergency generator would be a 1,500-horsepower diesel unit that would operate 50 hours per year.

The proposed project would either seek LEED certification or meet the applicable GreenPoint requirements, which include measures applicable to both construction and operation of the proposed project. The proposed project would incorporate several sustainability features, including stormwater and rainwater collection features and a wastewater treatment system.

F. THE HUB HOUSING SUSTAINABILITY DISTRICT

An HSD creates a streamlined ministerial approval process for housing or mixed-use projects that meet certain requirements. The City, through adoption of an ordinance by the San Francisco Board of Supervisors, could choose to designate portions or all of the Hub Plan area as an HSD, in accordance with Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11. To qualify as an HSD, the following general requirements must be met:

1. The HSD must be within 0.5 mile of public transit or otherwise highly suitable for residential or mixed-use development;
2. The area of an individual district must not be larger than 15 percent of the city’s total land area;
3. An ordinance creating the district must include procedures and timelines for review of projects;
4. At least 20 percent of all housing units constructed in the HSD must be affordable to very low, low, and moderate income households for a period of no less than 55 years; and
5. The HSD must allow for ministerial approval of housing (including mixed-use residential) projects.

The Hub Plan area meets criteria 1 and 2, above, and is anticipated to meet criteria 3 and 4. Any local ordinance creating an HSD would allow for ministerial approval of projects, satisfying criterion 5. The HSD could include all or a subset of sites within the plan area that are zoned to permit residential use.

In order to participate in an HSD, an individual project would need to:

1. Make at least 10 percent of the units onsite affordable to lower-income households (in San Francisco, all projects would still be required to satisfy Planning Code section 415 inclusionary requirements, either by providing all inclusionary units onsite or a combination of onsite and fee payments);
2. Meet labor standards, including prevailing wage and trained workforce requirements, if meeting certain project size thresholds;
3. Meet any adopted design review standards;
4. Be approvable through a ministerial process; and
5. Incorporate applicable mitigation measures from the EIR evaluating the HSD ordinance (i.e., this Hub Plan and Related Actions EIR).

The HSD could include all sites within the Hub Plan area that are zoned to permit residential use. Should the plan area be designated as an HSD, implementation of the HSD would not change or intensify the anticipated physical or programmatic parameters of development expected or allowed under the proposed Hub Plan. Pursuant to Government Code sections 66202 to 66210 and Public Resources Code sections 21155.10 and 21155.11, projects approved pursuant to the Hub HSD would not be subject to further environmental review.

G. Project Approvals

The Hub Plan

The Hub Plan would be subject to review and approval by agencies with appropriate jurisdiction, including various City agencies. These agencies are expected to use the EIR in their decision-making for project approvals, including but not limited to those listed below.

San Francisco Planning Commission

- Certify EIR.
- Initiate general plan amendments.
- Recommend to the San Francisco Board of Supervisors general plan amendments, planning code text amendments, and zoning map amendments to update the Market and Octavia Area plan and change the land use, zoning, and height and bulk classifications in the Hub Plan area.

San Francisco Board of Supervisors

- Approve general plan amendments, planning code text amendments, and zoning map amendments to update the Market and Octavia Area plan and change the land use, zoning, and height and bulk classifications in the Hub Plan area.
- Approve encroachment permits for the installation of nonstandard street or sidewalk paving or other nonstandard street or sidewalk improvements.

San Francisco Municipal Transportation Agency

- Approve vehicular parking and traffic changes associated with the Hub Plan's circulation, streetscape improvements, and street network changes.

San Francisco Public Health

- Approve the use of groundwater wells during dewatering associated construction.

San Francisco Public Utilities Commission

- Approve landscape and irrigation plans. This applies to projects installing or modifying 500 square feet or more of landscape area.
- Approve the use of groundwater wells during dewatering associated construction.

San Francisco Public Works

- Approve streetscape improvements.

Caltrans

- Approve the redesign of South Van Ness Avenue (U.S. 101) between Mission and 13th streets.

Individual Development Projects

The individual projects would be subject to review and approval by agencies with appropriate jurisdiction, including various City and other local, state, and federal agencies. These agencies are expected to use the EIR in their decision-making for project approvals, including, but not limited to, those listed below. Approval of the Hub Plan by the San Francisco Planning Commission and San Francisco Board of Supervisors, specifically, the general plan, planning code, and zoning map amendments, would also approve land use and height changes proposed for the individual projects.

30 Van Ness Avenue Project

San Francisco Planning Commission

- Certify EIR.
- Approve an office allocation, pursuant to Planning Code section 321.
- Approve a Downtown Project Authorization by the Planning Commission, per Planning Code section 309, for projects within the Downtown Commercial (C-3-G) district more than 50,000 square feet in area or more than 75 feet in height, with exceptions to the requirements of Reduction of Ground-Level Wind Currents in C-3 Districts (Planning Code section 148) and Reduction of Shadows on Certain Public or Publicly Accessible Open Spaces in C-3 Districts (Planning Code section 147).
- Approve a conditional use authorization to exempt the floor area attributed to the onsite inclusionary affordable units from the floor area ratio (Planning Code section 124).
- Approve potential variances under Planning Code section 305 if required by final design of the building.
- Approve potential in-kind agreement for public infrastructure or facilities consistent with planning code requirements if proposed by the sponsor.

San Francisco Board of Supervisors

- Approval of modification to the planning code to allow for the use of permitted accessory nonresidential parking spaces for residential parking.

San Francisco Department of Building Inspection

- Approve and issue construction permits.

San Francisco Municipal Transportation Agency

- Approve on-street vehicular parking and on-street loading changes.

San Francisco Public Health

- Approve the use of groundwater wells during dewatering associated construction.

San Francisco Public Utilities Commission

- Approve landscape and irrigation plans. This applies to projects installing or modifying 500 square feet or more of landscape area.
- Approve the use of groundwater wells during dewatering associated construction.

San Francisco Public Works

- Approve any proposed new, removed, or relocated street trees and/or landscaping within the public sidewalk.
- Approve streetscape changes.
- Approve situations where construction would need to extend beyond normal hours, between the hours of 8 p.m. and 7 a.m., such as concrete pours, crane and hoist erection and adjustment activities, site maintenance activities, and material delivery and handling.
- Approve and issue permits for wind canopies.

98 Franklin Street Project

San Francisco Planning Commission

- Certify EIR.
- Approve a Downtown Project Authorization, pursuant to Planning Code section 309, for new construction or substantial alteration of structures in C-3 Districts, with exceptions to the requirements of Reduction of Ground-Level Wind Currents in C-3 Districts (Planning Code section 148) and Reduction of Shadows on Certain Public or Publicly Accessible Open Spaces in C-3 Districts (Planning Code section 147).
- Approve a conditional use authorization to exempt the floor area attributed to the onsite inclusionary affordable units from the floor area ratio requirement (Planning Code section 124)
- Approve potential variances for dwelling unit exposure under Planning Code section 305 if required by final design of the building.
- Approve an in-kind fee waiver for the proposed improvements to Lily Street.

San Francisco Department of Building Inspection

- Approve and issue demolition and construction permits.

San Francisco Municipal Transportation Agency

- Approve on-street vehicular parking and on-street loading changes.

San Francisco Public Health

- Approve the use of groundwater wells during dewatering associated construction.

San Francisco Public Utilities Commission

- Approve landscape and irrigation plans. This applies to projects installing or modifying 500 square feet or more of landscape area.
- Approve the use of groundwater wells during dewatering associated construction.

San Francisco Public Works

- Approve any proposed new, removed, or relocated street trees and/or landscaping adjacent to the public sidewalk.
- Approve the proposed improvements to Lily Street.
- Approve streetscape changes at 98 Franklin Street.
- Approve situations involving construction that would need to extend beyond normal hours (i.e., between 8 p.m. and 7 a.m.); these could include concrete pours, crane and hoist erection and adjustment activities, site maintenance activities, and material delivery and handling.
- Approve and issue permits for wind canopies.

The Hub Housing Sustainability District

San Francisco Planning Commission

- Certify EIR.
- Recommend to the San Francisco Board of Supervisors text amendments for the planning code as well as business and tax regulations to designate portions or all of the Hub Plan area as an HSD.

San Francisco Board of Supervisors

- Adopt an ordinance that amends the planning code as well as business and tax regulations to designate portions or all of the Hub Plan area as an HSD.

3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

A. INTRODUCTION

This chapter analyzes the physical environmental effects of implementing the Hub Plan[1] described in Chapter 2, Project Description, including the proposed streetscape and street network improvements, the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and the designation of portions or all of the Hub Plan area as a housing sustainability district (HSD). Also included in this chapter is the regulatory framework applicable to the Hub Plan and related actions, the thresholds used to determine the significance of potential impacts, the construction and operational impacts that may occur as a result of project implementation, and measures to mitigate identified significant impacts.

B. INITIAL STUDY

The San Francisco Planning Department (department) prepared an initial study to determine which environmental topics would require further study and analysis in an environmental impact report (EIR). The initial study (Appendix B) found impacts related to the topics of land use/planning, aesthetics, population and housing, tribal cultural resources, greenhouse gas emissions, recreation, utilities and service systems, public services, geology and soils, hydrology and water quality, mineral resources, energy, and agriculture and forestry resources, and wildfire to be less than significant, thereby requiring no further study in the EIR. The initial study found significant impacts related to biological resources, geology and soils, and hazards and hazardous materials; mitigation measures were identified that would reduce those impacts to less than significant. The initial study's conclusions are summarized in **Table S-2**, p. S-58, in the Summary.

C. SCOPE AND ORGANIZATION OF THIS CHAPTER

This chapter is organized by environmental resource topic, as follows:

A. Cultural Resources (CUL)

B. Transportation and Circulation (TR)

C. Noise (NOI)

D. Air Quality (AQ)

E. Wind (WI)

F. Shadow (SH)

[1] The Hub Plan is an amendment to the 2008 Market and Octavia Area Plan; no separate Hub Plan will be published.

Each environmental topic in the table above is presented within a setting (i.e., a description of physical characteristics applicable to the environmental topic) to compare conditions as they exist without the project and then again with anticipated activities, regulations, and subsequent development under the Hub Plan, the two individual development projects, and the Hub HSD, which is the basis for the analysis of environmental impacts. Thus, the evaluation of impacts in this chapter under each environmental topic is based on specific "study areas" dictated by the characteristics of the resource being evaluated as well as the type, magnitude, and location of potential environmental effects. The introduction to each resource topic in this chapter defines the setting where the effects of the Hub Plan, the two individual development projects, and the Hub HSD are considered and clarifies relevant details regarding the definition and location of the study area if different from the Hub Plan area shown in **Figure 2-1**, p. 2-2, in Chapter 2, Project Description.

Each section of this chapter contains the following elements, based on the requirements of the California Environmental Quality Act (CEQA):

- *Environmental Setting*. This section presents a description of the existing physical environmental conditions in the Hub Plan area with respect to each resource topic as of May 2018, the month and year when the department issued a notice of preparation (NOP) for initiating environmental review. The environmental setting constitutes baseline physical conditions by which potential impacts of the Hub Plan, the two individual development projects, and the Hub HSD are assessed for significance. CEQA Guidelines section 15360 defines the environment (or the setting) as "the physical conditions which exist within the area which will be affected by a proposed project."
- *Regulatory Framework*. The regulatory section provides an overview of statutory and regulatory considerations that are applicable to the specific environmental topic.
- *Impacts and Mitigation Measures*. The impacts and mitigation measures section for each environmental topic presents a discussion of the impacts (i.e., the changes to baseline physical environmental conditions) that could result from implementation of the Hub Plan, the two individual development projects, and the Hub HSD. Where applicable, both construction and operational impacts are analyzed as well as project-specific and cumulative impacts. The section begins with the criteria of significance, which establish the metric by which significance is determined. The latter part of this section assesses the impacts occurring as a result of project implementation and mitigation measures, if required. Project impacts are organized into separate categories, based on the criteria listed in each topical section. Impacts are numbered and shown in bold type, and the corresponding mitigation measures, where identified, are numbered and indented, following the impact statements. Impacts are numbered consecutively within each topic. Mitigation measures are labeled alphabetically within each impact statement. Each mitigation measure includes an abbreviated reference to the impact section (e.g., AQ).

- *Cumulative Impacts.* This section considers the incremental effects of implementing the Hub Plan, two individual development projects, and Hub HSD, together with the environmental effects of other closely related past, present, and reasonably foreseeable probable future projects proposed by the department, other jurisdictions, or other entities (i.e., private developers, non-profit organizations, etc.). The analysis of cumulative impacts under each resource topic is based on the same setting, regulatory framework, and significance criteria as the analysis of project-specific impacts. Additional mitigation measures are identified if the analysis determines that the Hub Plan, two individual development projects, and Hub HSD, causes or makes a cumulatively considerable contribution to a significant adverse cumulative impact.

D. CLASSIFICATION OF IMPACTS

Impacts are categorized by type of impact, as follows:

- *No Impact (NI)*. No adverse changes (or impacts) on the environment are expected.
- *Less than Significant (LTS)*. An impact that would not involve an adverse physical change to the environment, does not exceed the defined significance criteria, or would be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations.
- *Less than Significant with Mitigation (LTSM)*. An impact that is reduced to a less-than-significant level though implementation of the identified mitigation measures.
- *Significant and Unavoidable with Mitigation (SUM)*. An adverse physical environmental impact that exceeds the defined significance criteria and can be reduced through compliance with existing local, state, and federal laws and regulations and/or implementation of all feasible mitigation measures but cannot be reduced to a less-than-significant level.
- *Significant and Unavoidable (SU)*. An adverse physical environmental impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations and for which there are no feasible mitigation measures.

E. MITIGATION MEASURES

Section 15126.4 of the CEQA Guidelines directs preparers of an EIR to describe feasible measures that could minimize significant adverse impacts. Mitigation measures are developed to avoid, minimize, rectify, reduce, or eliminate an impact or compensate for an impact resulting from project implementation. Section 15041 of the CEQA Guidelines grants authority to the lead agency to require feasible changes in any or all activities involved in a project to substantially lessen or avoid significant effects on the environment. Feasible mitigation measures have been included in this chapter for specific environmental impacts where applicable.

F. Approach to the Analysis

Neither the Hub Plan nor Hub HSD would immediately result in new development, with the exception of the streetscape and street network improvements. The Hub Plan is a regulatory program and would result in changes to current zoning controls, including building heights (on 18 sites), reclassifications of zoning districts (largely from NCT-3 to C-3-G in the southern portion of the Hub Plan area), and expansion of the Van Ness and Market Downtown Residential Special Use District to encompass the southern portion of the Hub Plan area. The proposed rezoning would allow and incentivize more housing, including below-market-rate housing, within the Hub Plan area. Various streetscape and street network improvements are also proposed as part of the Hub Plan. The Hub HSD would allow for ministerial approval of projects if certain criteria are met, allowing for faster approval of qualified housing projects. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would result in new development in the Hub Plan area. Both projects would introduce new housing and population to the area, which could affect environmental resources. These projects are described and analyzed on a project-specific level.

This EIR evaluates potential impacts that would result from the increase in density and construction due to implementation of the Hub Plan and Hub HSD as well as the two individual development projects and the Hub Plan streetscape and street network improvements. **Table 3-1** presents population and employment projections for the Hub Plan area that would result from implementation of the Hub Plan, including the streetscape and street network improvements, the two individual development projects, and the Hub HSD. The Hub Plan could result in up to approximately 8,100 housing units, 15,700 new city residents, and 275 new jobs.

It is noted that the 8,100 housing units incorporates a 15 percent buffer beyond what was originally projected under the plan (approximately 7,040 housing units). This is intended to account for potential density bonuses, including the State Density Bonus Program, 100 percent Affordable Housing Bonus Program, and HOME-SF (the City and County of San Francisco's [City's] local density bonus program).

It is further noted that although the number of jobs anticipated as a result of the 30 Van Ness Avenue and 98 Franklin Street projects (1,534) surpasses the total number of jobs listed in **Table 3-1** for the entire Hub Plan area (275), it is expected that other sites throughout the Hub

TABLE 3-1. PROJECTED RESIDENTS AND EMPLOYEES WITHIN THE HUB PLAN AREA AND THE INDIVIDUAL PROJECT SITES

Land Use	Units/Gross Square Footage (sf)	Generation Rate	Estimated Residents/Employees
Residents			
The Hub Plan	8,100 units[a]	1.3 persons/studio 1.7 persons/one bedroom 2.5 persons/two bedrooms+[b]	15,700 residents[c]
30 Van Ness Avenue[d]	520,000 sf/610 units 229 studios 229 one-bedroom units 92 two-bedroom units 60 three-bedroom units	1.3 persons/studio 1.7 persons/one bedroom 2.5 persons/two bedrooms+[b]	1,067 residents
98 Franklin Street[d]	384,080 sf/345 units 172 studios 86 one-bedroom units 54 two-bedroom units 33 three-bedroom units	1.3 persons/studio 1.7 persons/one bedroom 2.5 persons/two bedrooms+[b]	587 residents
Employees			
The Hub Plan - Commercial	N/A	N/A	275 employees[e]
30 Van Ness Avenue – Office	350,000 sf	240 sf/employee	1,460 employees[f]
30 Van Ness Avenue – Retail	21,000 sf	350 sf/employee	60 employees[f]
98 Franklin Street – Retail	3,100 sf	350 sf/employee	9 employees[g]
98 Franklin Street – Institutional (School)	81,000 sf	N/A	5 employees[g]

Source: San Francisco Planning Department, *Hub Plan Development Estimates and Methodology*, June 13, 2019.

a. Future residential development under the Hub Plan was calculated by taking anticipated total gross square footage and dividing by 1,200 gross square feet per residential unit. This number was then increased by 15 percent to account for the potential density bonuses, including the State Density Bonus Program, 100 percent Affordable Housing Bonus Program, and HOME-SF (the City and County of San Francisco's [City's] local density bonus program).

b. Two or more bedrooms.

c. Future population estimated from a weighted average of 1.94 persons per developed residential unit, assuming a unit mix of 20 percent studio, 40 percent one bedroom, and 40 percent two bedroom, with average occupancy of 1.3, 1.7, and 2.5, respectively. Future population estimate reflects the 15 percent increase in the number of residential units assumed in note "a," above.

d. The total number of residential units and residents under the 30 Van Ness Avenue and 98 Franklin Street projects is included in the totals provided for the Hub Plan.

e. Jobs were estimated from anticipated gross square footage of development by use type. It is noted that the transportation model run that was completed before 170 Otis was added as one of the Hub Plan sites; however, the

TABLE 3-1. PROJECTED RESIDENTS AND EMPLOYEES WITHIN THE HUB PLAN AREA AND THE INDIVIDUAL PROJECT SITES

Land Use	Units/Gross Square Footage (sf)	Generation Rate	Estimated Residents/Employees

approximately 125 employees that could be added on this site as a result of the upzoning under the Hub Plan are accounted for in the 275 additional employees listed in this table under the Hub Plan.

[f.] This table presents the estimated maximum number of employees that would be generated by the 30 Van Ness Avenue Project. As discussed in Chapter 3, the existing uses at the project site include general office, pharmacy, and restaurant uses. Based on the employee density factors used by the planning department for non-residential uses, these existing uses, in combination, would yield approximately 816 existing employees at the site. Thus, the total number of net new employees that would be generated by the proposed 30 Van Ness Avenue Project is approximately 700. The SF-CHAMP transportation model that was run for the proposed project, with output that feeds into the transportation, air quality, and noise analyses in this EIR, nets out the existing uses at this site.

[g.] This table does not take into account the approximately two employees associated with the existing parking lot use at 98 Franklin Street.

Plan area that currently include non-residential uses (and therefore, jobs) would, over time, be replaced with residential uses, resulting in an overall net increase of approximately 275 jobs area-wide. Analysis of the physical effects of implementation of the Hub Plan is based in part on the above growth assumptions.

One of the project sites being considered for upzoning as part of the Hub Plan, at 170 Otis Street, was added in October 2018, after the original population and employment numbers were developed and incorporated into the SF-CHAMP transportation model run. A proposed maximum height of 150 feet at this site would be able to accommodate two stories of office uses, which could generate approximately 125 jobs. The 125 jobs are included as part of the total jobs anticipated area wide as a result of the Hub Plan (in Table 3-1, above); however, because they were not included as part of the SF-CHAMP model run that was conducted for the project, they were not explicitly part of those projections. However, any incremental travel demand associated with the additional employees at 170 Otis Street would supplant a portion of the 15 percent buffer that was included in the transportation model run for the residential uses, as explained above. Moreover, the additional height that is assumed at 170 Otis Street is considered as part of the wind and shadow analysis, as explained further in those sections. Any subsequent future project proposed at this location would be required to undergo project-specific CEQA analysis, which would consider all site- and project-specific impacts. It is not expected that environmental impacts associated with such projects would be more severe than those disclosed in this EIR.

Although the Hub Plan EIR contains projections of population and housing growth through 2040, the EIR does not include these population and housing projections as a cap or limit to growth within the areas that would be subject to the Hub Plan. Rather, the growth projections are based on the best estimates that were available at the time when this Hub Plan EIR was published and do not constitute “caps” on permissible development or estimates of maximum capacity at buildout under the proposed rezoning. The growth projections in the EIR are an analytical tool to contextualize the potential environmental impacts of the Hub Plan. The EIR assumes a total amount of development resulting from the Hub Plan that consists of all development types (residential, commercial, office, etc.), also taking into account existing uses throughout the Hub Plan area, and analyzes potential impacts, based on this total net development amount.

The population growth projections do not represent a cap or the upper limit of development permissible under the Hub Plan. Furthermore, an exceedance of the growth projections would not necessarily result in significant physical environmental impacts. For example, population estimates are used to assess whether the Hub Plan would increase the use of neighborhood parks such that substantial physical deterioration of the facilities would occur or require construction of new physical recreation facilities that might have an adverse physical effect on the environment. Similarly, population estimates are used to analyze the potential need for new public services (such as a police or fire services) and utilities, the construction of which could result in adverse physical effects. In other words, even if an exceedance of the growth projections occurs over time (as subsequent development projects are proposed in the future), the environmental review for those projects will focus on whether new or more severe physical environmental impacts than those that were previously analyzed in the EIR will occur. In addition, the analysis in CEQA documents typically presents existing and existing-plus-project scenarios to identify impacts by comparing conditions with the proposed project to existing conditions. However, in the study area, several transportation infrastructure projects and land use development projects are under construction or were recently completed. Some are approved and funded and therefore expected to be under construction or completed by the time the proposed project (i.e., development under the Hub Plan, including the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street) is under construction. Because of these changing conditions, a modified or future baseline, different from existing conditions, was determined to be appropriate for the analyses prepared in this section because an analysis based on existing conditions could be misleading to decision makers and the public.

The baseline includes land use development projects that were under construction at the time when the NOP was published (May 23, 2018). Transportation infrastructure projects that were approved and funded, and therefore likely to be completed by the time the proposed project would be under construction, are also included as part of baseline conditions. This future baseline year was determined to be 2020 because it aligns with the baseline analysis year of the model used for the transportation analysis. The projects included in the 2020 baseline condition will result in implementation of various transportation network changes. These include travel-lane reductions, new bicycle lanes, safety projects, streetscape projects that have been recently implemented (e.g., Upper Market Street Safety Project, Safer Market Street Project, signal timing changes on Market and Mission streets, which were completed prior to 2018), transportation projects that have been approved and funded or are under construction (e.g., Van Ness Bus Rapid

Transit/Van Ness Improvement Project, Polk Street Streetscape Project), and land use development projects that will most likely be completed by the 2020 baseline year (e.g., 1546–1564 Market Street Project, 1629 Market Street Project, 1699 Market Street Project, 1500 Mission Street Project, 150 Van Ness Avenue Project, 22–24 Franklin Street Project).

G. Approach to Cumulative Impacts

CEQA requires an evaluation of a proposed project's potential contributions to cumulative impacts, in addition to proposed project-specific impacts. CEQA Guidelines section 15130(a)(1) states that a "cumulative impact consists of an impact which is created as a result of the combination of the proposed project evaluated in the EIR together with other proposed projects causing related impacts." Other proposed projects include past, present, and reasonably probable future proposed projects.

CEQA Guidelines section 15130(b)(1) states that the approach to the cumulative impact analysis may be based on either of the following approaches, or a combination thereof:

- A list of past, present, and probable future projects producing related or cumulative impacts and/or
- A summary of projections contained in an adopted general plan or related planning document that describes or evaluates conditions that contribute to the cumulative effect.

The cumulative context for most land use effects is typically localized, either within the vicinity of the project site or at the neighborhood level. For the purposes of this analysis, cumulative development in the Hub Plan area includes projects for which the department has an environmental evaluation application on file and projects that the department has otherwise determined to be reasonably foreseeable future projects (see **Table 3-2** and **Figures 3-1A** and **3-1B**, pp. 3-15 and 3-16). The areas and the projects relevant to the analysis vary, depending on the topic, as detailed in the cumulative analyses in subsequent sections of this document. As shown, these projects include primarily new residential, retail, and office uses.

For transportation analysis, as well as some noise and air quality analysis, discussed in Sections 3.B, 3.C, and 3.D, a modified set of cumulative projects was used to analyze cumulative impacts. This is because larger geographic areas are typically considered for transportation analysis, and transportation projects are included in the cumulative project list. Four of the projects in **Table 3-2**, 10 South Van Ness Avenue (Honda Site), One Oak Street, 30 Otis Street, and 42 Otis Street, are part of the cumulative list but also sites proposed for upzoning as part of the Hub Plan.

TABLE 3-2. CUMULATIVE PROJECTS[2]

Project	Description
1629 Market Street (1601–1637 Market Street, 1125 Stevenson Street, 53 Colton Street [Plumbers Union site]) Case No. 2015-00584ENV	The project would demolish the existing UA Local 38 building (1621 Market Street), demolish the majority of the Lesser Brothers Building (1629–1645 Market Street), rehabilitate the Civic Center Hotel (1601 Market Street), and demolish the 242-space surface vehicular parking lots. In total, the project would construct five new buildings (ranging from four to 10 stories, 58 to 85 feet tall). The project would include 477 market-rate residential units and 107 below-market-rate supportive housing units. The project would also include construction of the 18,300-square-foot Brady Open Space at the northeast corner of Brady and Colton streets. Within the new buildings, there would be approximately 13,100 square feet of ground-floor retail/restaurant space. The project received CEQA clearance on October 19, 2017.
1700 Market Street Case No. 2013.1179E	The project would demolish an existing two-story building and construct an eight-story mixed-use residential building (up to 48 dwelling units) with approximately 1,500 square feet of ground-floor retail (85 feet tall). The project received CEQA clearance in 2014. Demolition began at the end of 2018.
South of Market Freeway Ramp Intersection Safety Study[3]	In July 2019, the San Francisco County Transportation Authority (SFCTA) published the South of Market Freeway Ramp Intersection Safety Study. The purpose of this report was to make recommendations that would increase safety for road users at 10 freeway ramp intersections in the South of Market area. The study contained recommendations for two ramp locations in the Hub Plan area: the Mission Street/13th Street/U.S. 101 northbound off-ramp and the South Van Ness Avenue/13th Street/U.S. 101 southbound on-ramp. The study indicated that improvements at the intersection of Mission, Otis, Duboce, and 13th streets could be funded with revenue from Market and Octavia Area Plan fees. Improvements to South Van Ness Avenue and 13th Street would be implemented by the SFMTA in 2022 or 2023.
1740 Market Street Case No. 2014.0409E	The project would demolish an existing approximately 25,000-square-foot commercial building and construct a nine-story, 85-foot-tall mixed-use building with 110 group-housing dwelling units and approximately 7,600 square feet of ground-floor retail (85 feet tall). The project received CEQA clearance in 2016.

2 The list of cumulative projects was prepared at the time of publication of the NOP for the EIR (May 23, 2018). This list was updated in October 2018 and February 2019.

3 In June 2019, the department became aware of this report. These recommendations were not modeled as part of the Hub's SF CHAMP 2040 Model, and therefore, the recommendations for the SoMa Ramp Intersection Safety Study are not included in this EIR's cumulative impact analysis. The SFCTA study recommends that as part of the Mission, Otis, Duboce and 13th Street intersection, Otis Street be maintained as a one-way street. This EIR analyzes a two-way Otis Street as part of the Hub Plan streetscape and street network improvements. The two-way Otis Street configuration is anticipated to be more impactful in terms of noise, air quality, and transportation impacts. Therefore, this EIR has analyzed a more conservative version of the proposed Hub streetscape and street network improvements.

TABLE 3-2. CUMULATIVE PROJECTS[2]

Project	Description
1601 Mission Street (Tower Car Wash) Case No. 2014.1121ENV	The project would demolish the existing gas station facilities and construct a 120-foot-tall, 12-story mixed-use building containing up to 220 dwelling units, 7,336 square feet of retail space, and up to 97 below-grade vehicular parking spaces that would be accessed from South Van Ness Avenue. The building would be 140 feet tall, including 20 feet for a mechanical penthouse and solarium. The project received CEQA clearance in 2016.
10 South Van Ness Avenue (Honda Site) Case No. 2015-004568ENV	The project would demolish an existing two-story building and construct a mixed-use residential building with up to 984 residential units, retail space on the ground floor, and two below-grade levels for vehicular parking and loading activities (up to 518 vehicular parking spaces and seven freight loading spaces), which would be accessed from a single curb cut and driveway on 12th Street. Two project design options are being considered: the "project," a two-tower design with two separate 41-story, 400-foot-tall towers (420 feet to the top of the elevator penthouses) on top of podiums, and the "single tower project variant," a single 55-story, 590-foot-tall tower (610 feet to the top of the elevator penthouses) on top of a podium. The project would include approximately 48,000 square feet of usable open space, including an approximately 3,000-square-foot mid-block alley that would provide a connection for people walking between South Van Ness Avenue and 12th Street; the single tower project variant would include approximately 47,000 square feet of open space and the mid-block alley for people walking. The project is currently undergoing environmental review.
One Oak Street (formerly 1500–1540 Market Street) Case No. 2009.0159E	The project would demolish two existing buildings and construct a 39-story mixed-use residential building (400 feet tall plus a 20-foot-tall parapet, for a total height of 420 feet). The project would include a total of 320 residential units, approximately 13,000 gross square feet of retail/restaurant uses on the ground floor and potentially the 21st floor, and 160 accessory vehicular parking spaces for building residents. The project received CEQA clearance on June 15, 2017.
30 Otis Street Case No. 2015-010013ENV	The project would demolish the existing buildings and construct an approximately 27-story, 250-foot-tall (plus a 20-foot-tall parapet) mixed-use building. The project would include up to 354 dwelling units. Approximately 13,000 square feet of space on the ground floor would be used by the City Ballet School, which currently operates onsite. In addition, the ground floor would have approximately 4,600 square feet of retail space. The project received CEQA clearance on September 27, 2018. Demolition began at the end of 2018.
42 Otis Street Case No. 2016-005406ENV	The project site contains a two-story industrial building on an approximately 4,100-square-foot lot; the building is currently used as commercial space. The project would replace the existing building with a 15,805-square-foot, five-story, 55-foot-tall mixed-used building (63 feet tall with elevator penthouse). The proposed building would have 24 single-occupancy residential units on the upper floors and 1,900 square feet of ground-floor commercial space fronting Otis Street. No off-street vehicular parking would be provided. The project received CEQA clearance February 23, 2018.

TABLE 3-2. CUMULATIVE PROJECTS[2]

Project	Description
200–214 Van Ness Avenue (San Francisco Conservatory of Music Mixed-Use Project) Case No. 2015-012994ENV	The project would demolish two buildings, a three-story building with 27 dwelling units (200 Van Ness Avenue) and a two-story building, approximately 12,400 gross square feet, with vacant offices that were previously occupied by the Lighthouse for the Blind (214 Van Ness Avenue). The project would merge the two sites and construct a 12-story mixed-use building to provide housing and other facilities for the San Francisco Conservatory of Music. The proposed building would have approximately 113 units (420 beds), three faculty housing units, 27 housing units to replace the 27 existing units at 200 Van Ness Avenue, approximately 49,600 gross square feet of institutional uses, approximately 4,320 gross square feet of broadcast studio space, and 5,000 gross square feet of restaurant space. The new building would be 120 feet tall, with an additional 12 feet for rooftop architectural features and another 2.5 feet for rooftop mechanical equipment (total height of 134.5 feet). The project would include two underground levels for bicycle storage, institutional spaces, and mechanical equipment. No vehicular parking is proposed. The project received CEQA clearance in January 2018 and is under construction.
Parcel M (300 Octavia Street) (Assessor's Block 0832/026) and Parcel N (350 Octavia Street) (Assessor's Block 0832/025) Case No. 2014-002330ENV	The project site consists of two discontinuous vacant lots along the east side of Octavia Street, between Fell and Oak streets. Parcel M is an approximately 2,200-square-foot lot with frontages on Fell, Octavia, and Hickory streets; Parcel N is an approximately 2,300-square-foot lot with frontages on Oak, Octavia, and Hickory streets. The project includes construction of two 55-foot-tall (70 feet with elevator penthouse), five-story mixed-use buildings, approximately 15,400 square feet in size, with 12 residential units over approximately 800 square feet of ground-floor commercial use. No off-street vehicular parking is proposed. The project includes installation of a corner bulb-out at the southeast corner of Octavia and Fell streets. The project received CEQA clearance in January 2016.
Parcel T/188 Octavia Street (Assessor's Block 0853/033, 034, and 022) Case No. 2014.1509ENV	The project would construct a five-story, 55-foot-tall (71 feet with elevator penthouse) mixed-use building with up to 26 dwelling units above ground-floor commercial space. No off-street vehicular parking is proposed. The project received CEQA clearance in March 2017.
Parcel O (455 Fell Street) (Assessor's Block 0831/024) Case No. 2015-002837ENV	The 100 percent below-market-rate housing project would provide approximately 108 below-market-rate apartment dwelling units, approximately 1,200 square feet of ground-floor retail space, approximately 2,000 square feet of office space, and approximately 2,900 square feet for community activities; vehicular parking would not be provided. The building would be 60 feet tall, including the elevator penthouse. The project would include a mid-block passage for people walking that would connect Oak and Fell streets and align with a similar mid-block passage for people walking that would be constructed as part of the Parcel P project, a 182-unit mixed-use development in Hayes Valley. The project received CEQA clearance in 2016.
Parcel R and Parcel S (Assessor's Block 0838/034, 035, 093–096) Case No. 2014.1322ENV	The project would redevelop each existing vacant lot into a mixed-use project, consisting of two buildings with 100 percent below-market-rate housing (up to 56 dwelling units) and approximately 7,500 square feet in each building for ground-floor neighborhood-serving retail. The building would be 55 feet tall, not including the elevator penthouse. The project would partially satisfy the offsite below-market-rate requirement for the multi-family One Oak Street Project. The project is currently undergoing environmental review.

TABLE 3-2. CUMULATIVE PROJECTS[2]

Project	Description
1245 Folsom Street Case No. 2015-014148ENV	The project would demolish the existing one-story building and construct a seven-story building at Folsom Street and a five-story mixed-use building at Ringold Street. It would include 37 residential units above ground-floor commercial space, with vehicular parking in a basement level. The project received CEQA clearance September 21, 2018.
1228 Folsom Street Case No. 2014.0964ENV	The project would merge three lots into one lot, demolish the existing 16,450-square-foot building, and construct a new 41,440-square-foot, mixed-use building containing 24 residential units and 1,110 square feet of ground-floor commercial use. The building would be 65 feet tall (79 feet tall with elevator penthouse) and six stories on its Folsom Street frontage and 45 feet tall and four stories on its Clementina Street frontage. The project received environmental clearance in November 2016.
1695 Folsom Street Case No. 2015-012878ENV	The project would construct a five-story building with four dwelling units and one basement level. The project is currently undergoing environmental review.
1500–1528 15th Street Case No. 2016-011827ENV	The project would demolish an existing automotive sales office, smog check facility, and vehicular parking area to construct an eight-story, 62,100-square-foot building with 1,300 square feet of ground-floor retail and 184 group housing units (up to 75 feet tall). No off-street vehicular parking is proposed. The project is currently undergoing environmental review.
198 Valencia Street Case No. 2013.1458E	The project would demolish an existing one-story, 1,900-square-foot oil change facility and surface vehicular parking lot with seven off-street vehicular parking spaces and construct a five-story, 55-foot-tall, 33,795-gross-square-foot mixed-use building (6,269 gross square feet of ground-floor commercial space and a subterranean garage to accommodate 19 off-street vehicular parking spaces) with 28 residential units (16 one-bedroom units and 12 two-bedroom units) on the first through fourth floor. The project received environmental clearance in June 2016.
1870 Market Street Case No. 2014.1060ENV	The project would demolish a vacant single-story, 600-gross-square-foot commercial building and a four-vehicle surface vehicular parking lot and construct an approximately eight-story, 85-foot-tall (with an additional 16 feet for the mechanical and staircase penthouses) mixed-use development. The approximately 16,300-gross-square-foot building would be comprised of approximately 12,900 gross square feet of residential space and 400 gross square feet of ground-floor commercial space. The proposed project would provide approximately 10 dwelling units. No off-street vehicular parking is proposed. The project received environmental clearance in September 2017.

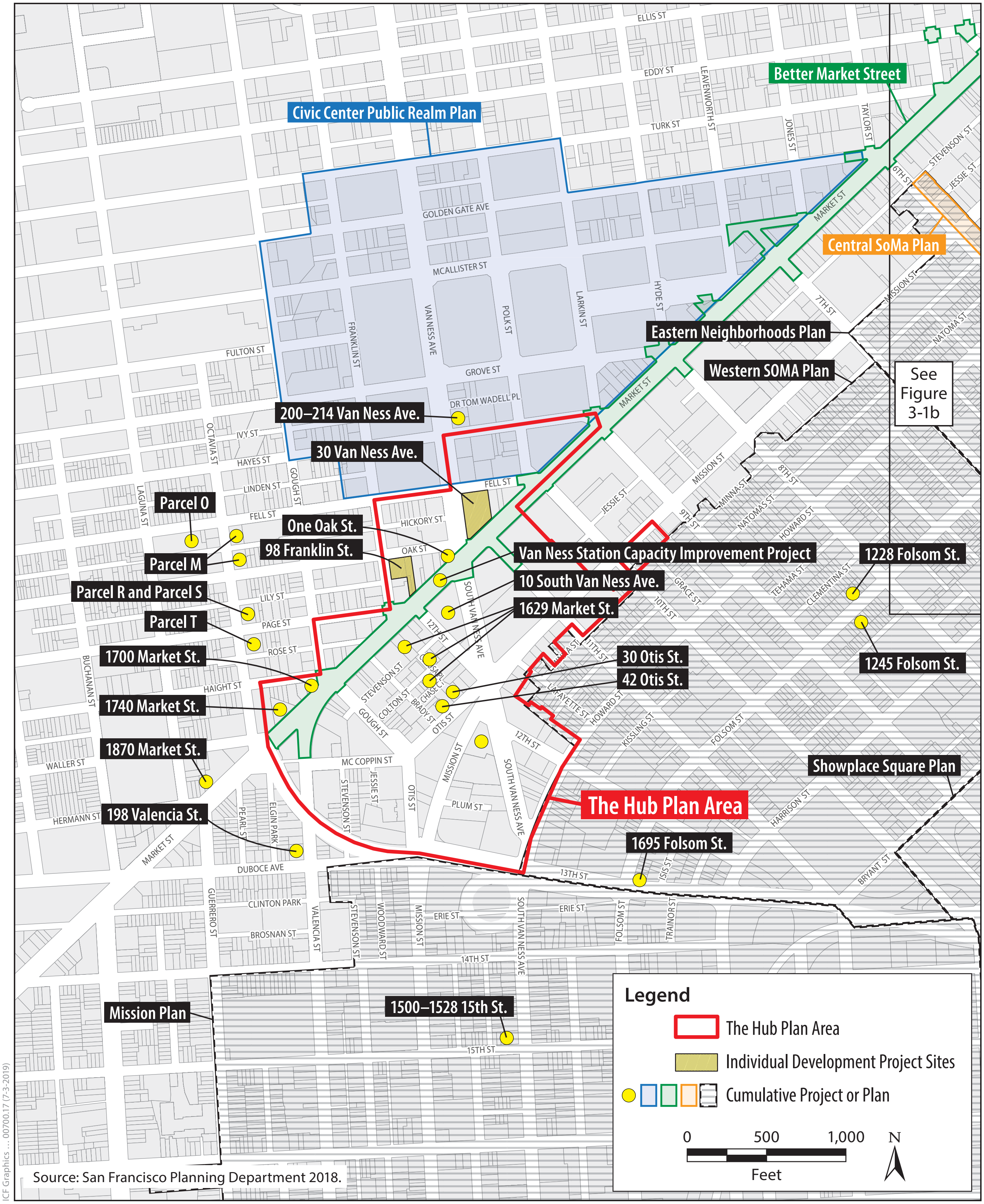
TABLE 3-2. CUMULATIVE PROJECTS[2]

Project	Description
Better Market Street (BMS) Case No. 2014. 0012E	San Francisco Public Works, in coordination with the department and MTA, would provide various transportation and streetscape improvements along the 2.2-mile segment of Market Street between Steuart Street and Octavia Boulevard. The project would introduce changes to the roadway configuration as well as private vehicle access, traffic signals, surface transit (including San Francisco Municipal Railway–only lanes, stop spacing and service, stop locations, stop characteristics, and infrastructure), bicycle facilities, pedestrian facilities, streetscapes, commercial and passenger loading, vehicular parking, and utilities. The project would also change traffic configurations on adjacent streets that intersect Market Street to both the north and the south. In addition to the proposed project, the project sponsor is considering one project variant: the Western Variant. The variant would be located within a portion of the same corridor as the proposed project but would vary in terms of proposed improvements/regulations for discrete portions of the corridor. The Western Variant would include the approximately 0.6-mile portion of Market Street between Octavia Boulevard and a point approximately 300 feet east of the Hayes and Market Street intersection. The Western Variant seeks improvements beyond those of the proposed project related to pedestrian and bicyclist safety, comfort, and mobility through additional reductions to conflicts between different modes of transportation. The project is currently undergoing environmental review.
Central South of Market (SoMa) Plan Case No. 2011. 1356E	The Central SoMa Plan (formerly, Central Corridor Plan) is a comprehensive plan for the area surrounding much of the southern portion of the Central Subway transit line, a 1.7-mile extension of the Third Street light-rail line, which will link the Caltrain depot at Fourth and King streets to Chinatown and provide service within the SoMa area. The Central SoMa Plan area includes roughly 230 acres, comprising 17 city blocks, as well as the streets and thoroughfares that connect SoMa to its adjacent neighborhoods: Downtown, Mission Bay, Rincon Hill, and the Mission District. The Central SoMa Plan would rezone the area for a variety of land uses, including residential and retail, and increase height limits in some areas. The Central SoMa Plan would also propose improvements for streets and open spaces in the area. The Central SoMa Plan was approved on December 4, 2018.
The Civic Center Public Realm Plan Case No. 2015-000937ENV	The Civic Center Public Realm Plan proposes medium- and long-term improvements to Civic Center's plazas, streets, and other public spaces. The plan is an interagency effort managed by the department in partnership with multiple City agencies. The Public Realm Plan is part of the City's larger Civic Center initiative to improve the area as both a neighborhood gathering space and a public commons.

TABLE 3-2. CUMULATIVE PROJECTS[2]

Project	Description
Van Ness Station Capacity Improvement Project	The SFTMTA proposes to improve access at the Van Ness Avenue San Francisco Municipal Railway (Muni) station. Improvements at the Van Ness Avenue Muni station would generally include street-to-mezzanine circulation improvements, including additional or replacement elevators, stairs, escalators, and portal canopies; mezzanine-to-platform circulation improvements, including additional or replacement elevators, stairs, and escalators; wayfinding and other signs at street level and within the station; upgrades to booths for station agents and fare gates; platform improvements to support operations; and platform improvements to improve comfort and security for passengers. The project is not yet under environmental review.
Eastern Neighborhoods Rezoning and Area Plans Case No. 2004.0160E	The Eastern Neighborhoods Rezoning and Area Plans enabled about half of the area's industrial lands to transition to zoning that allows new housing and provided policies and mechanisms that ensured "complete neighborhoods" as a result of new growth. The San Francisco Planning Commission certified the final EIR in August 2008, and the San Francisco Board of Supervisors adopted the plan in January 2009.
The West South of Market (SoMa) Plan Case Nos. 2008.0877E and 2007.1053E	Originally part of the Eastern Neighborhoods planning process, Western SoMa was defined as a separate area in 2004. The San Francisco Planning Commission certified the final EIR in December 2012, and the San Francisco Board of Supervisors adopted the Western SoMa Area Plan in March 2013. The proposed project consists of three components: 1) adoption of the Western SoMa Community Plan, 2) the rezoning of 46 parcels with 35 lots, and 3) development of the privately funded mixed-use project proposed at 350 Eighth Street.

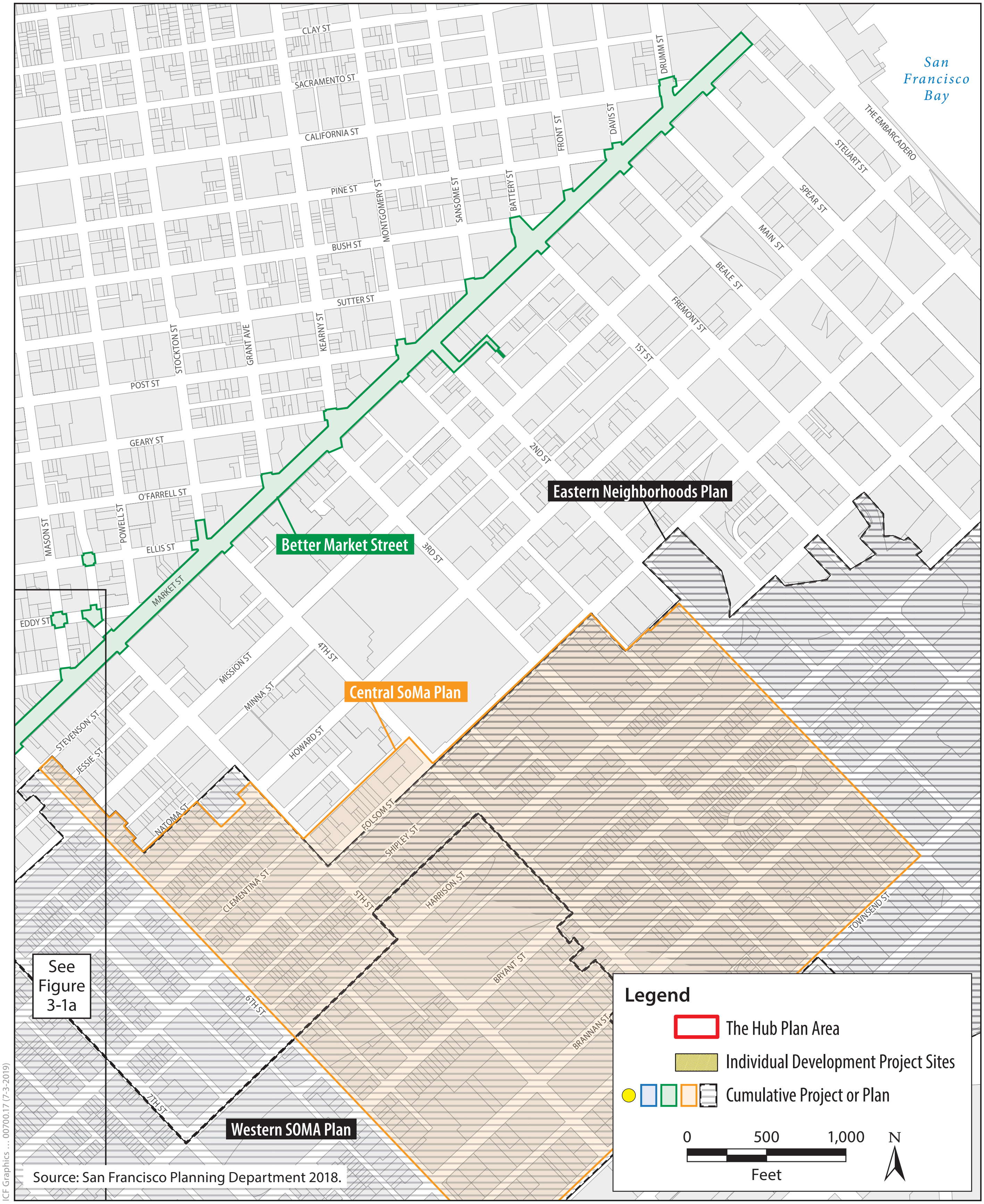
Source: San Francisco Planning Department 2018.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3-1a
Cumulative Projects



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3-1b
Cumulative Projects

3.A Cultural Resources

Introduction

Defining Cultural Resources

The term "cultural resources" refers to built-environment resources, archaeological resources, and human remains. Tribal cultural resources and paleontological resources are discussed in separate sections in the initial study (Appendix B). In this section of the environmental impact report (EIR), the term "built-environment resources" is used to distinguish built resources (i.e., buildings, structures, objects, districts) from archaeological resources. A "historical resource"[1] is defined in California Environmental Quality Act (CEQA) section 21084.1 and CEQA Guidelines section 15064.5 as one that meets at least one of the following criteria:

- A resource listed in, or determined by the State Historical Resources Commission to be eligible for listing in, the California Register of Historical Resources shall be considered to be historically significant (Public Resources Code section 5024.1, title 14 California Code of Regulations [CCR], section 4850 et seq.);
- A resource included in a local register of historical resources, as defined in Public Resources Code section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of Public Resources Code section 5024.1(g) shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California register (Public Resources Code section 5024.1, title 14 CCR, section 4852).

A lead agency is allowed to determine that a resource may be a historical resource, as defined in Public Resources Code sections 5020.1(j) or 5024.1, even if it is not listed in, or determined to be eligible for listing in, the California register; not included in a local register of historical resources, pursuant to Public Resources Code section 5020.1(k); or identified in a historical resources survey meeting the criteria of Public Resources Code section 5024.1(g).

---

[1] Under CEQA, archaeological resources are called "historical resources," whether they are of historic or prehistoric age.

Articles 10 and 11 of the San Francisco Planning Code established historic registers in San Francisco that qualify as local registers under CEQA. In addition, the City of San Francisco (City) has adopted several historic resource surveys, which list other CEQA historical resources in the city that may or may not be listed under articles 10 or 11. As relevant to this EIR, these surveys are discussed below.

Outline of This Section

This section describes the cultural resources that have the potential to be affected by the Hub Plan,[2] two individual development projects, and Hub Housing Sustainability District (HSD); identifies any built-environment resources as defined under CEQA; assesses the potential for encountering significant archaeological resources and human remains based on documentary research and geoarchaeological studies; and evaluates potential impacts on those resources that would result from the Hub Plan, the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and the Hub HSD and cause a significant impact on historical resources. In support of the analysis, this section first describes the prehistoric and historic setting of the Hub Plan area, then presents information on cultural resources that are known to be located in the Hub Plan area, in addition to a discussion of the archaeological sensitivity in the Hub Plan area. This section then evaluates whether the land use changes and streetscape and street network improvements proposed under the Hub Plan, as well as the two individual development projects and the Hub HSD, have the potential to cause a substantial adverse change in any historical resource. According to CEQA Guidelines section 15064.5(b), a project is considered to have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource. Mitigation measures are provided in order to reduce or avoid identified significant impacts on historical resources.

The City received no comments regarding cultural resources on the notice of preparation (NOP) (Appendix A) issued for the Hub Plan, the two individual development projects, and the Hub HSD.

Environmental Setting

The Hub Plan area is located at the juncture of the Downtown/Civic Center, South of Market (SoMa), Western Addition, and Mission neighborhoods of San Francisco. Elevations across the Hub Plan area range from 25 to 100 to feet above mean sea level, with the lowest point (25 feet above mean sea level) at the bottom of a subtle basin centered at the intersection of Mission Street and South Van Ness Avenue.

---

[2] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

The environmental setting of the Hub Plan, two individual development projects, and the Hub HSD consists of the prehistoric and historic contexts, as well as a description of the known historical built-environment resources and archaeological sensitivity within the CEQA study area, which is the area where potential impacts could occur. The CEQA study area encompasses the entirety of the Hub Plan area and extends beyond the Hub Plan area to include any additional parcels that are adjacent to the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, both of which are at the border of the Hub Plan area. The CEQA study area also includes the roadways outside of the Hub Plan area where streetscape and street network improvements are proposed under the Hub Plan and 98 Franklin Street Project. One historic district that is adjacent to the boundaries of the Hub Plan area, the Elgin Park-Pearl Street Reconstruction Historic District, does not overlap with the CEQA study area but is analyzed for impacts in this section because the potential exists for its setting to be altered. The CEQA study area and locations of historical built-environment resources are shown in **Figure 3.A-1**, p. 3.A-20. Archaeological sensitivity analysis is limited to the Hub Plan area, a smaller area than the CEQA study area delineated for purposes of assessing built-environment resources.

This section describes the geological, archaeological, and historical setting of the Hub Plan area, as based on the Archaeological Research Design and Treatment Plan (ARDTP).[3]

Geological Context

This section describes the geology of the Hub Plan area and the environmental factors considered in performing the archaeological sensitivity analysis of buried prehistoric resources. The Hub Plan area is on the San Francisco Peninsula, which is part of the Coast Range geomorphic province. The San Francisco Peninsula is bounded by the Pacific Ocean to the west, the San Francisco Bay and Central Valley to the east, and the northern extent of the Santa Cruz Mountains to the south. The peninsula formed as a result tectonic pressure, faulting, and deformation along the boundary between the Pacific plate and North American plate approximately 150 million years ago and 66 million years ago. Sea-level change, as a result of glacial advancement and recession, has resulted in multiple periods of substantial sediment deposition on the San Francisco Peninsula. Between 120,000 and 8,000 years ago, dune sands and riverwash marshes deposited sediments, collectively referred to as the Colma formation. Since then, rising sea levels and winds have formed tidal flats and sand dunes in the Hub Plan area, with occasional marshes forming in the troughs between the sand dunes. Development during the 19th century produced widespread fill across the Hub Plan area.

---

3 ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018, pp. 3-1 to 3-32. This document contains sensitive archaeological information and is confidential.

PREHISTORIC CONTEXT

Cultural developments in the San Francisco Bay Area have been summarized by numerous archaeologists. These summaries have divided the prehistoric cultural sequence into multiple phases or periods, which are delineated by changes in regional patterns of land use, subsistence, and tool types over time. The most recent chronologies encompass a time period that ranges from approximately 13,500 to 170 calibrated years before present (cal BP). The early periods of this section's chronology are based on recent research from along the California Coast,[4,5,6] while the later periods of this chronology are based on the time periods proposed by Groza et al.,[7] with additional information integrated from the previous chronologies described below. The sequence incudes six periods, which are briefly summarized in **Table 3.A-1**. These periods are academic constructs and do not necessarily reflect Native American viewpoints.

TABLE 3.A-1. SAN FRANCISCO PENINSULA PRECONTACT CULTURAL CHRONOLOGY

Period	Time Range (cal BP)	Diagnostic Site Attributes	Land Use Pattern
Terminal Pleistocene	13,500–11,600	Large stone bifaces and bone technology. Fluted stone bifaces, attributed to the Clovis culture, occur during this period.	Uplands, inland valleys
Early Holocene	11,600–7,700	Appearance of hand stones and milling slabs, large flaked cores and cobble tools, flake tools (stemmed points, crescents, and steep-edged), and bifaces.	Inland valleys
Middle Holocene	7,700–3,800	Ground stone; side-notched dart points; cobble (large stone-sized) chopping, scraping, and pounding implements; as well as shell beads and ornaments.	Uplands with occasional bay margin resources

4 Byrd, B. F., P. Kaijankoski, J. Meyer, A. Whitaker, R. Allen, M. Bunse, and B. Larson, *Archaeological Research Design and Treatment Plan for the Transit Center District Plan Area*, San Francisco, California, prepared for the San Francisco Planning Department, 2010.

5 Erlandson, J. M., T. C. Rick, T. L. Jones, and J. F. Porcasi, *One if by Land, Two if by Sea: Who Were the First Californians?* In (Ed. T. L. Jones and K. A. Klar) *California Prehistory: Colonization, Culture, and Complexity. Alta Mira Press*, Lanham, MD, 2007.

6 Rick, T. C., J. M. Erlandson, and R. L. Vellanoweth, Paleocoastal Marine Fishing on the Pacific Coast of the Americas: Perspectives from Daisy Cave, California. *American Antiquity* 66:595–614, 2001.

7 Groza, R. G., J. Rosenthal, J. Southon, and R. Milliken, A Refined Shell Bead Chronology for Late Holocene Central California. *Journal of California and Great Basin Anthropology 31:13–32*, 2011.

TABLE 3.A-1. SAN FRANCISCO PENINSULA PRECONTACT CULTURAL CHRONOLOGY

Period	Time Range (cal BP)	Diagnostic Site Attributes	Land Use Pattern
Early Period of the Late Holocene	4,500/3,800–2,450	Establishment of several large shell mounds and appearance of stemmed and short broad-leaf projectile points, square-based knife blades, both unshaped and cylindrical mortars, cylindrical pestles, crescentic stones, perforated charmstones, bone awls, polished ribs, notched and grooved net sinkers, rectangular and spired *Olivella* beads, rectangular abalone beads, various pendant types, antler wedges, and stone bars or "pencils."	Bay margins and uplands
Middle Period of the Late Holocene	2,050–900	Greater settlement permanence, mound building, and increasing social complexity and ritual elaboration. New artifact types include barbless and single-barbed bone fishing spears, large mortars, ear spools (or adornments), and varied forms of *Haliotis* and *Olivella* shell ornaments.	Bay margins and uplands
Late Period of the Late Holocene	700–170	Clamshell disk beads, distinctive *Haliotis* shell pendants, flanged steatite pipes, chevron-etched bone whistles and tubes, "flower pot" mortars, coiled basketry awls, as well as bow and arrow technology.	Bay margins and uplands

Source: ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018, pp. 3-9 to 3-11. This document contains sensitive archaeological information and is confidential.
cal BP = calibrated years before present

Across the U.S., the Terminal Pleistocene is generally considered to be represented by wide-ranging hunters and gatherers who periodically exploited large game. Archaeological sites from this period typically comprise very spare lithic assemblages, with few or no archaeological features, and large, fluted projectile points. Despite archaeological sites from this period being infrequently encountered and poorly understood across the U.S., a handful of sites that appear to date to this period have been found on the periphery of the Bay Area, including the Borax Lake site (LAK-36), Tracy Lake, Hidden Valley, NAP-131, and Wolfsen Mound (MER-215).

The Early Holocene (11,600–7,700 cal BP) landscape of central California[8] is characterized by the semi-mobile hunter-gatherers who exploited a wide range of food resources from marine, lacustrine, and terrestrial contexts. However, the sample of prehistoric archaeological sites is

[8] Located in the middle of the state, central California includes Fresno, Modesto, Salinas, Visalia, Clovis, Merced, Turlock, Madera, Tulare, Porterville, and Hanford counties.

limited in the Bay Area and therefore most likely represents an incomplete picture of local prehistoric land use during this period. The four dated Early Holocene sites in or near the Bay Area consist of two sites at Los Vaqueros Reservoir in the East Bay (CA-CCO-696 and -637), the Blood Alley Site (CA-SCL-178) in the Coyote Narrows of the Santa Clara Valley, and CA-SCR-177 at Scott's Valley in the Santa Cruz Mountains. All of the sites identified above were recovered from buried terrestrial contexts.

The Middle Holocene (7,700–3,800 cal BP) is characterized by a diverse range of habitation sites and artifact assemblages, which suggest higher population levels, more complex adaptive strategies, and longer seasonal occupation than that during the Early Holocene. More than 30 Bay Area archaeological sites have produced radiocarbon dates that indicate occupation during this time segment, including ALA-483 in the Livermore Valley, the Marsh Creek site (CA-CCO-18/548) in the northern Diablo Range, and MRN-17 on de Silva Island in Richardson Bay. Several isolated human burials, including three on the San Francisco Peninsula (CA-SFR-28, CA-SFR-205, and CA-SMA-273), have also been dated to the Middle Holocene.

The majority of the archaeological sites discovered on the San Francisco Peninsula, with more than 200 documented, date to the Late Holocene (3,800–170 cal BP). The Late Holocene is generally divided into the following three main sub-periods: Early (4,500/3,800–2,450 cal BP), Middle (2,050–900 cal BP), and Late (700–170 cal BP); with two transitional sub-periods: Early-Middle Transition (2,450–2,050 cal BP), and Middle-Late Transition (900–700 cal BP). The Middle and Late periods have been further subdivided into four and two subdivisions, respectively, based largely on the dating of specific types of shell beads.

The Early Period of the Late Holocene marks the establishment of several large shell mounds. Prominent sites along the bay margins that have produced particularly early dates, encompassing dates at the end of the Middle Holocene, include University Village (CA-SMA-77), the Ellis Landing site (CA-CCO-295), the San Bruno mound (CA-SMA-40), the Stege mound (CA-CCO-298), the West Berkeley mound (CA-ALA-307), and CA-ALA-17 (no common name provided).

The Middle Period of the Late Holocene is characterized by greater settlement permanence (either sedentary or multi-season occupation), mound building, and increased social complexity and ritual elaboration. Carbon dating from nine sites within San Francisco (CA-SFR-4, CA-SFR6/26, CA-SFR-112 through CA-SFR-114, CA-SFR-129, CA-SFR-147, CA-SFR-171, and CA-SFR-175) suggest increased occupation of the San Francisco Peninsula during this period.

Although the Late Period of the Late Holocene is the best documented Late Holocene division throughout the greater Bay Area, it is represented by only two sites, CA-SFR-171 and CA-SFR-154, both located in San Francisco County. Both appear to be representations of smaller seasonal or special-use areas. Radiocarbon dating and obsidian hydration samples taken from material found at CA-SFR-171 indicate an occupation period between 500 and 550 cal BP. Archaeological investigations at CA-SFR-154 uncovered a 40-centimeter-thick midden deposit beneath dune sands and historic debris. This deposit is thought to be associated with the ethnographically identified village known as *Sitlintac*. Dating methods indicate that occupation at CA-SFR-154 may have extended into the Mission Period.

HISTORIC CONTEXT

This subsection, describing the historic-period context of the Hub Plan area, is based on the ARDTP and Department of Parks and Recreation (DPR) site record forms completed for the Hub Plan built-environment survey, which are included in Appendix C.

SPANISH AND MEXICAN PERIODS

Explorations of the Bay Area by the Spanish began in 1769. In 1776, Juan de Bautista de Anza led a party from Monterey into what is now San Francisco to explore settlement locations. Anza chose the site of today's Fort Point for a new Spanish garrison, or presidio, and chose a creek location approximately 3 miles to the southeast, which he named Arroyo de los Dolores, for a new mission. Under the Spanish and subsequent Mexican governing of San Francisco, the Hub Plan area was not the site of settlement or development. Mission cattle very likely grazed there periodically, and a horse trail approximating today's Mission Street extended from the anchorage at Yerba Buena cove upslope toward the mission through a landscape of hills that were covered by bush and scrub oaks. In 1847, Jasper O'Farrell, Surveyor General of Alta California, was commissioned to conduct a land survey of San Francisco. O'Farrell's survey resulted in the creation of Market Street as San Francisco's main artery, paralleling the old horse trail between the cove and the mission, which became Mission Street. North of Market Street, O'Farrell expanded an earlier 12-block, 50-vara (a 33⅓-inch Spanish equivalent to the yard) grid to the south and west, with streets running in cardinal directions. South of Market Street, O'Farrell created a grid of larger 100-vara blocks, intended for agricultural use, with streets aligned northeast, northwest, southeast, and southwest rather than cardinally. Subsequent survey work extended the smaller block sizes north of Market Street to the west and into today's Hayes Valley.[9,10,11,12]

---

9 ICF, *Archaeological Sensitivity Assessment for the Better Market Street Project, San Francisco, California*, prepared for the San Francisco Planning Department, October 2015, pp. 40 and 41.

10 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, pp. 22 to 26.

11 ICF, *Cultural Landscape Evaluation, Better Market Street Project, Market Street, San Francisco, California*, prepared for San Francisco Public Works, November 2016, pp. 4-2 and 4-3.

12 U.S. Coast Survey, *City of San Francisco and Its Vicinity,* from a trigonometrical survey by R.D. Cutts, assistant; topography by A.F. Rodgers, sub-assistant; hydrology by the party under the command of Lieutenant James Alden, U.S.N., assistant, Washington, D.C., 1853.

GOLD RUSH PERIOD TO 1906 DISASTER

Although San Francisco expanded with development activity as a result of the 1848 Gold Rush, it took several decades for industrial and residential development to extend into the area that would become the Hub Plan area. Despite plank roads between the bay and the mission along Mission and Folsom streets in the mid-1850s, the Hub Plan area remained a landscape of hills and dunes into the 1860s. A tract of 160 acres containing a low-lying area at the western edge of the current-day Hub area was acquired by Thomas Hayes around 1850. Now known as Hayes Valley, this area contained coast live oaks that distinguished it from surrounding portions of the Hub Plan area that were covered in sand dunes. Hayes initially attempted to farm his land but soon turned to the idea of subdividing it for residential development, which took off the following decade once improvements to rail transit made Hayes Valley more accessible from central San Francisco. In 1866, City Order 1684 established street lines and grades west and south of Ninth and Larkin streets, across today's Hub area and into areas farther south and west.[13,14] Subsequent cut-and-fill activity transformed the landscape and facilitated urban development.

The name "Hub" was a result of transportation development. During the 1860s, the first commuter streetcar lines crossed the area that would become the Hub Plan area along Market Street and Howard Street. The San Francisco and San José Railroad, constructed during the early part of the decade and the first rail line to connect the two cities, originally terminated near Market and Valencia streets. Although the line would subsequently bypass Valencia Street, its acquisition by the Market Street Railroad Company led to the establishment of shared terminal and shop facilities south of Market Street, east of Valencia Street, and west of Mission Street.[15,16] During the early 1880s, the Central Pacific Railroad acquired the Market Street Railroad Company, converted it to a cable car system, and renamed it the Market Street Cable Railway. The company also developed its main powerhouse complex on the terminal site south of Market Street and east of Valencia Street. The system was later converted to electric power and renamed the Market Street Railway Company, then subsequently renamed the United Railroads of San Francisco. Owing to the rail facilities and the convergence of

---

13 M. M. O'Shaughnessy, *Official Grades of the Public Streets of the City and County of San Francisco, Comprising All Grades Established to December 31, 1912*, San Francisco: City and County of San Francisco, 1912, pp. 3 and 4.

14 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, pp. 22 to 37.

15 ICF, *Archaeological Sensitivity Assessment for the Better Market Street Project, San Francisco, California*, prepared for the San Francisco Planning Department, October 2015, pp. 49 and 50.

16 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, p. 36.

streetcar lines at Valencia and Market streets that conveyed riders between downtown San Francisco and outlying neighborhoods, the surrounding neighborhood was known as "the Hub" by the 1880s and into the 1940s.[17,18]

Once a peripheral location of weekend resorts and other leisure venues that were visited by residents of urbanized San Francisco, the Hub Plan area retained a suburban character until the 1880s when residential and industrial development resulted in greater urban density. By the turn of the century, a dense stock of mostly wood-framed residential, commercial, and industrial buildings occupied the majority of the blocks within the Hub Plan area.[19,20]

RECONSTRUCTION AND DEVELOPMENT THROUGH THE MID-20TH CENTURY

On April 18, 1906, a major earthquake struck the Bay Area. The earthquake's impact was worsened by liquefaction in areas that had been reclaimed through filling. Numerous masonry buildings were destroyed or damaged, along with older, generally smaller frame buildings. With water mains broken across the city, fires and eventually firestorms were fed by unseasonably warm weather and winds for three days immediately following the earthquake. Fire swept through those portions of the Hub Plan area east of Gough Street, devastating a large portion of the city and destroying an estimated 28,000 buildings overall. Many buildings that might have survived the earthquake alone were destroyed by fires or had to be demolished in the aftermath. The brick powerhouse chimney at the United Railroads terminal site collapsed. The disaster produced an enormous amount of debris. Workers laid railroad lines down Market Street and other streets to facilitate rubble removal, which took many months.[21]

Post-disaster reconstruction took place quickly along Market Street and in some residential enclaves but longer in the SoMa area. Commercial, residential, and mixed-use buildings constructed from 1906 to 1913 represented 60 percent of the surviving building stock along Market Street in 2011.[22] Beyond Market Street, the need for shelter, including lower-cost wood-framed buildings (compared to masonry structures), led many San Franciscans to

---

17 John Horn, Market Street Hub Neighborhood Historical Essay, 2018, *http://www.foundsf.org/index.php?title=Market_Street_Hub_Neighborhood*, accessed April 24, 2018.

18 ICF, *Archaeological Sensitivity Assessment for the Better Market Street Project, San Francisco, California*, prepared for the San Francisco Planning Department, October 2015, pp. 49 to 57.

19 R. W. Olmstead, Historical Overview, Chapter 3, in *California Department of Transportation, San Francisco Central Freeway Replacement Project—Alternative 8B: Archaeological Research Design and Treatment Plan City and County of San Francisco, CA*, 2002, p. 80.

20 Sanborn Fire Insurance Company, *Sanborn Fire Insurance Company Maps*, 1899, 1905.

21 ICF, *Archaeological Sensitivity Assessment for the Better Market Street Project, San Francisco, California*, prepared for the San Francisco Planning Department, October 2015, pp. 57 to 58.

22 Tim Kelley Consulting, LLC, *Draft Historic Context Statement, Mid-Market Historical Survey*, prepared for the San Francisco Redevelopment Agency, June 30, 2011, p. 17.

prioritize residential reconstruction. More working class and industrial in character than areas north of Market Street, the SoMa area was rebuilt at a slower pace. Some industrialists and business owners wanted to extend a previously established fire district that required fire-resistant exteriors in the SoMa area and prohibit the densely packed frame residences that had fed the fires. Some industries and businesses simply relocated to other areas of the city.

The board of supervisors eventually decided not to extend the fire district but did institute a policy of prohibiting flammable roofing materials and requiring concrete construction for some structure types. Amid the uncertainty, many owners of smaller lots to the south of Market Street opted to sell their properties to industrialists.[23,24]

In addition to buildings, a wide array of infrastructure had to be reconstructed across the city. Streets, sidewalks, and sewers had to be replaced or repaired. The bureau of streets reported, for example, that, by 1908, it had repaired 3,287 sewers, cleaned 66 blocks of sewers, and emptied 1,000 cesspools. By 1908, utility providers had also dug almost 16,000 "openings" in city streets to install new water, gas, and electricity lines.[25] Between 1908 and 1913, the City constructed the Auxiliary Water Supply System (AWSS), a multi-component emergency fire suppression water system, which is located throughout the city's central business district and in adjacent residential neighborhoods. The AWSS was designed to withstand a major earthquake and prevent the type of cataclysmic fire that occurred in 1906. The AWSS incorporated numerous redundancies, including high-pressure water hydrants, cisterns, and a gravity-fed water distribution main that could also be pressurized by pumping stations in the event of an emergency.[26]

Industrial Development

The Hub Plan area and its vicinity changed substantially as it recovered from the earthquake and fires. Many longstanding industries were reestablished, and community institutions such as churches were rebuilt or constructed anew at different locations. Whereas 62,000 people resided in the SoMa area in 1900, only 24,500 lived there in 1910. The trend away from residential use and toward greater industrial and commercial use in the district would

---

23 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, pp. 48 to 54.

24 Tim Kelley Consulting, LLC, *Draft Historic Context Statement, Mid-Market Historical Survey*, prepared for the San Francisco Redevelopment Agency, June 30, 2011, pp. 14 to 16.

25 JRP Historical Consulting, LLC, *Historic-Era Context in Archaeological Research Design and Treatment Plan for the Transit Center District Plan Area, San Francisco, California*, prepared for the San Francisco Planning Department, February 2010, pp. 64 to 66.

26 ICF, *San Francisco Auxiliary Water Supply System*, Department of Parks and Recreation 523 District Record, prepared for San Francisco Public Works, 2018, pp. 18 to 28.

continue for decades, reducing the number of families and increasing the number of unmarried men who resided there. The struggle over building codes and fire zone ordinances, which limited industrial redevelopment in the immediate aftermath of the 1906 disaster, was resolved in 1909 when the City and County of San Francisco finally made reinforced-concrete construction a requirement for Class A structures.[27] As a result, most of the industrial structures that did get constructed during the 1906–1909 period were modest one- to two-story wood- or iron-framed buildings. Several of the larger surviving industrial buildings were constructed in the decade after 1909. During the economic boom of the 1920s, industrial development dramatically accelerated across the SoMa area, resulting in construction of both modest and larger industrial buildings.[28,29]

During the first half of the 20th century, the SoMa area's leading industries, in terms of the number of workers employed, were (in descending order) associated with printing and publishing, apparel manufacturing, machinery, furniture, chemicals, and electrical machinery. As previously noted, the transportation industry was represented by the United Railroads facility from which the Hub Plan area derived its name. The prevalence of industrial firms accounts for the high number of reinforced-concrete buildings in the portion of the Hub Plan area south of Market Street. Urban industrialization in the Hub Plan area meant the presence of labor unions and so-called labor "temples" as well as fraternal halls that functioned as important pre-World War II social institutions for skilled workers and many managers. Although private development slowed during the Great Depression of the 1930s, larger, more resilient firms, such as the Pacific Telephone and Telegraph Company and the Coca Cola Company, constructed substantial buildings in the Hub Plan area during that decade. The SoMa area within and beyond the Hub Plan area retained its industrial character immediately following World War II. Over time, however, structural economic changes and the need to expand facilities led growth-seeking manufacturers to leave the area and relocate in suburbs, which were accessible by new freeways. By the 1970s, de-industrialization had diminished San Francisco's manufacturing economy, and areas south of Market Street became targets of redevelopment efforts.[30,31]

---

27 Class A structures are those that are rated as most fireproof for fire insurance assessment.

28 A. Averbach, San Francisco's South of Market District, 1850–1950: The Emergence of a Skid Row, in *California History* 52, fall 1973, pp. 203 to 206.

29 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, pp. 48 to 54.

30 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, pp. 59 to 92.

31 Page & Turnbull, *Historic Context Statement, South of Market Area, San Francisco, California*, prepared for the San Francisco Planning Department, June 30, 2009, pp. 67 to 70.

RESIDENTIAL DEVELOPMENT

Framed residential buildings dating to 1906–1909 within the Hub Plan area indicate the rapidity with which some residents or landlords undertook reconstruction following the earthquake and associated fires. Such residential buildings are present in the Hub Plan area north of Market Street as well as south of Market Street on Gough, McCoppin, Jessie, and Stevenson streets. However, many residents were not as well insured as others and not able to rebuild immediately following the disaster. Still, at a time when the automobile had yet to become a mass consumer product and an important factor in reshaping the urban built environment, the presence of multiple transit lines, converging in the Hub Plan area, ensured that residential development would continue through the 1920s, with a relatively short interruption during World War I.[32]

The leading type of smaller-scale residential construction within the Hub Plan area after the 1906 disaster was the two- to three-story multifamily building, or "flat." Developers typically constructed flats with full-floor dwelling units, as opposed to multiple dwelling units on each floor of an apartment building. Builders constructed flats in several variations, including single-flat stacks; double flats, formed from parallel dwelling units on each floor; and Romeo flats, consisting of a central circulation bay and flanking stacks of flats. Compared with multifamily flats, single-family dwellings were constructed far less frequently within the Hub Plan area from 1906 through the 1920s, and very few have survived to the present. Multifamily flats and single-family residences constructed in the Hub Plan area during this period typically featured Classical Revival, Mission Revival, and Craftsman façades.[33]

Larger residential buildings were also constructed in the Hub Plan area after 1906 and through the 1920s. These included larger wood-framed or masonry apartment buildings and hotels, rising to heights of three to seven stories. The larger residential buildings typically exhibited Classical Revival or Colonial Revival designs. Although larger apartment buildings often contained dwelling units that were large enough to accommodate families, the Hub Plan area also included boarding houses and single-resident-occupancy hotels, which were geared to the population of unmarried male workers who were employed by the industrial firms in the SoMa area. Single-resident-occupancy hotels typically had a single entrance to a first-story lobby, with a desk or office provided for an attendant. Mail boxes as well as commercial spaces were found across other portions of the first floor. A typical single-

---

32 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, p. 53, pp. 94 and 95.

33 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, p. 54, pp. 99 to 101.

resident-occupancy hotel dating to the first decade of post-disaster development in the Hub Plan area is the Civic Center Hotel at 1601–1605 Market Street, a five-story Classical Revival–style hotel constructed in 1915 at the southwest corner of Market and 12th streets.[34]

Mixed-use buildings with upper apartments constitute one of the more prominent residential building types in the Hub Plan area, particularly along and near Market Street. Built in substantial numbers within the Hub Plan area and surrounding areas from 1906 through the 1920s, such buildings typically feature masonry construction, first-story commercial space, and upper apartments, reaching heights of two to seven stories. These buildings have modest first-story residential entrances but more focal first-story commercial entrances. Leading masonry examples of mixed-use buildings within the Hub Plan area include the five-story Classical Revival–style buildings at 1649–1655 Market Street and 150 Franklin Street (both 1912); the five-story Renaissance Revival–style building at 1693–1695 Market Street (1914); the Colonial Revival–style five-story building at 1666–1669 Market Street (1913); the seven-story Classical Revival–style Miramar Apartments at 20 Franklin Street/1580–1595 Market Street, on the east side of Franklin Street north of the intersection of Market and Page streets (1917); and the six-story Renaissance Revival–style Gaffney Building at 1670 Market Street (1923).[35,36]

Residential development slowed dramatically within the Hub Plan area, as it did in much of San Francisco, during the Great Depression. Later, material shortages prohibited new residential construction during and after World War II. In the 1950s and 1960s, most residential construction remained limited to redevelopment projects and infill. Here and there, property owners demolished older residential buildings and constructed modern stucco-clad apartment buildings with below-grade vehicular parking. These were known as "dingbats." However, San Francisco's typically modest lot sizes prohibited the degree of dingbat development that occurred in other highly urbanized areas of California.[37]

AUTOMOBILE-ORIENTED TRANSPORTATION AND COMMERCIAL DEVELOPMENT

One of the earliest automobile-related businesses in the Hub Plan area was the Thomas B. Jeffery Company, a Rambler retailer that occupied the three-story masonry building at 56–70 12th Street, constructed in 1912. Automobile-related development accelerated and began reshaping portions

---

34 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, p. 54, pp. 96 and 97.

35 City of San Francisco, *Market Street Masonry Discontiguous District Revised Draft, Article 10 Landmark Designation Report*, September 12, 2012, pp. 5 to 42.

36 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, p. 104.

37 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, p. 95.

of the Hub Plan area in the 1930s as construction of the Golden Gate Bridge and the San Francisco-Oakland Bay Bridge (Bay Bridge) signaled the growing importance of automobile travel and the decline of rail service.

Beginning in 1926, Van Ness Avenue was extended south of Market Street to cut laterally through several city blocks and thereby create a new segment (i.e., South Van Ness Avenue) between Market Street and what became the southwestern terminus of Howard Street.

B.M. Rastall, an industrial engineer employed by the San Francisco Chamber of Commerce, devised a plan for extension of Van Ness Avenue. The board of supervisors adopted Rastall's plan, resulting in the avenue's present diagonal alignment. The first block, between Market and Mission streets, was completed in 1926.[38] Construction of this section led to real estate speculation along the corridor. By the late 1920s, the project, called the Van Ness Avenue Extension, fueled ambition for a north–south through route, connecting Fort Mason to Army Street (now Cesar Chavez Street) and beyond. A boulevard improvements bond in 1927 helped pay for the remaining section.

The Great Depression, as well as lower bond rates, delayed construction of the 500-foot-long section of the Van Ness Avenue extension between Mission and Howard streets until 1931.[39] Similar to events after completion of the first segment, completion of the extension resulted in a small real estate boom. The extension gained more value with the opening of the Bay Bridge in November 1936. An article from earlier in the year, covering construction of the McKean Brothers tire store at the corner of South Van Ness Avenue and 12th Street, predicted that the intersection would be "the busiest traffic artery in San Francisco when the bridge is opened for travel."[40]

When completed, the 125-foot-wide South Van Ness Avenue (initially called Van Ness Avenue South) fed vehicular traffic to Van Ness Avenue north of Market Street and became a major segment of U.S. 101 through San Francisco to and from the Golden Gate Bridge. Historically concentrated north of Market Street along the Van Ness Avenue corridor prior to the 1930s, automobile and truck showrooms, repair garages, parts stores, and service stations increasingly spread south of Market Street with the construction of South Van Ness Avenue. Between 12th and Howard streets, for example, South Van Ness Avenue was dominated by automobile repair and service buildings with Art Deco façades. In 1937, the California Department of Public Works completed construction of a State Motor Vehicle Office at 160 South Van Ness Avenue.[41,42,43]

---

38 *San Francisco Chronicle,* "Van Ness Extension to Be Opened Today," March 11, 1926, p. 10.

39 *San Francisco Chronicle,* "$9,380,000 Street Improvement Plan Nears Completion," August 16, 1931, p. 1.

40 *San Francisco Chronicle*, "McKean Pair Celebrates 20th Anniversary," March 22, 1936, p. 4A.

41 William Kostura, *Van Ness Auto Row Support Structures: A Survey of Automobile-Related Buildings along the Van Ness Avenue Corridor*, prepared for the San Francisco Planning Department, 2010, pp. 28 to 31.

42 R. W. Olmstead, Historical Overview, Chapter 3, in *California Department of Transportation, San Francisco Central Freeway Replacement Project—Alternative 8B: Archaeological Research Design and Treatment Plan City and County of San Francisco, CA*, 2002, pp. 88 and 89.

43 Page & Turnbull, *Historic Context Statement for the Market and Octavia Area Plan Historic Resource Survey, San Francisco, California*, prepared for the San Francisco Planning Department, 2007, pp. 85 to 106.

During the 1950s, transportation planners had a vision for a San Francisco that would be crossed by multiple elevated freeways. By 1955, the Central Freeway was completed from the Bayshore Freeway west to Mission Street, crossing the far southern end of the Hub Plan area. By 1959, it crossed Market Street and continued north into Hayes Valley along Octavia Street. Also in 1959, the Embarcadero Freeway was constructed beyond the Hub Plan area, extending from the Bay Bridge approach north to Broadway.

Mounting opposition to San Francisco freeway development coalesced in the Freeway Revolt of 1959–1962, which ended construction of the Embarcadero Freeway (which then reached as far north as Broadway) and the Central Freeway (which then extended to Golden Gate Avenue). One consequence of the construction of the Central Freeway above Duboce Avenue was further deterioration of adjacent neighborhoods and increasing blight, which subsequently led to redevelopment.[44] The Embarcadero Freeway and the Central Freeway as far south as Market Street were both dismantled following the 1989 Loma Prieta earthquake.

SOCIAL GROUPS IN THE HUB PLAN AREA

In addition to the physical development history of the Hub Plan area described above, the area's social history was investigated as part of the current study and informed the identification of historical resources. The ARDTP, in addition to previously prepared neighborhood- and thematic-based historic context statements, were reviewed in order to establish significant demographic trends that shaped the social fabric of the Hub Plan area during the late 19th and 20th centuries.

Social groups who have called the Hub Plan area and surrounding neighborhoods home since its early development in the second half of the 19th century have predominantly included working class populations attracted by the area's housing located in close proximity to industrial employers in the SoMa neighborhood. By 1879, the percentage of San Francisco's population who were born outside of the United States was greater than in any other U.S. city. Approximately one-third of the entire city's residents were of Irish descent. The percentage was even greater in the Hub Plan area, where approximately half of residents were of Irish descent. The Irish presence within and surrounding the Hub Plan area was manifested through institutions that served the community, including St. Joseph's Church at the corner of 10th and Howard streets. By the turn of the 20th century, the composition of the Hub Plan area's population also included a considerable number of unmarried male laborers of various ethnic backgrounds, who were not drawn to the neighborhood for its community institutions and social bonds. Rather, these laborers sought affordable short-term housing and often relocated to follow available work for the unskilled.[45]

---

44 R. W. Olmstead, Historical Overview, Chapter 3, in *California Department of Transportation, San Francisco Central Freeway Replacement Project—Alternative 8B: Archaeological Research Design and Treatment Plan City and County of San Francisco, CA*, 2002, pp. 90 and 91.

45 ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, pp. 3-27. This document contains sensitive archaeological information and is confidential.

Following the destruction of the Hub Plan area and wider SoMa district in the 1906 earthquake and fires, earlier types of industries were reestablished there during the city's reconstruction period. Although social and religious institutions such as St. Joseph's Church were rebuilt in the decade following the earthquake, much of the Irish community that had occupied SoMa in the late 19th and early 20th centuries was displaced to other working-class districts of San Francisco, including the Mission District (which borders the Hub Plan area to the south). Over the course of the early 20th century, changes to federal immigration policy introduced nation-based quota systems and reading requirements, which particularly targeted immigrants from Asian countries and led to a significant drop in the number of foreign-born individuals who arrived in San Francisco. Concurrently, through World War II, the population of single working-class men became even more pronounced in SoMa, as well as adjacent areas, where cheap and temporary accommodations such as residential hotels were available.[46]

During the second half of the 20th century, the SoMa district evolved into a thriving Filipino ethnic enclave. Immigrants from the Philippines began to arrive in San Francisco after the turn of the 20th century, following U.S. acquisition of the Philippines in the Spanish-American War in 1898. Because of U.S. possession of the Philippines, Filipinos qualified as U.S. nationals and, as a result, were allowed to travel to and find work in the U.S. Although many Filipino men were drawn to jobs in the state's rural agricultural industries through the 1920s, some sought work in San Francisco and formed the city's first pronounced Filipino enclave along Kearny Street in what was known as Manilatown, adjacent to the Financial District and Chinatown. An additional Filipino enclave subsequently took root in Japantown and grew during World War II after the neighborhood's Japanese-American residents were forcibly removed to internment camps. The Philippines gained its independence from the U.S. in 1946, which led to an increase in trade-oriented Filipino businesses in San Francisco. Manilatown remained the most important Filipino enclave in San Francisco until the Immigration Act of 1965, which substantially expanded the number of Filipinos who were granted residency in the U.S. each year. Many of the approximately 25,000 immigrants from the Philippines who resided in San Francisco by 1970 formed the Filipino community in SoMa, which in part took root there because urban renewal projects and increased downtown development had destroyed the community's earlier enclaves in Manilatown and Japantown.[47]

The Filipino enclave that defined the social and cultural fabric of SoMa beginning in the 1960s was manifested through numerous commercial establishments that served individuals with Filipino backgrounds, as well as social and cultural institutions that preserved and honored

---

[46] Page & Turnbull, *Historic Context Statement, South of Market Area, San Francisco, California, San Francisco, California*, prepared for the San Francisco Planning Department, June 30, 2009, pp. 31, 58.

[47] Page & Turnbull, *San Francisco Filipino Heritage Addendum to the South of Market Historic Context Statement*, prepared for the San Francisco Planning Department, March 13, 2013, pp. 4, 7, 12–14, 16, 18–20.

community ties and heritage. Many members of the community lived in housing along SoMa's smaller streets, including Natoma, Tehama, and Minna streets. During the 1960s and 1970s, this community was largely centered further east of the Hub Plan area and was generally bounded by Market, Third, Brannan, and Eighth streets.[48] However, residences, businesses, and significant institutions that contributed to the community were located farther to the west, including the formerly Irish-Catholic St. Joseph's Church at 10th and Howard streets (approximately one block east of the Hub Plan area's eastern boundary), which served a largely Filipino congregation after the 1960s.[49] In recognition of the continued place of Filipinos in the development of the SoMa area, the board of supervisors established the SoMa Pilipinas–Filipino Cultural Heritage District in 2016.[50] The cultural heritage district extends east to 11th Street and overlaps the eastern portion of the Hub Plan area.

Lesbian, gay, bisexual, transgender, and queer (LGBTQ) communities also made a discernible imprint on the SoMa district, and by extension the adjacent Hub area, during the last decades of the 20th century. While not the first neighborhood where San Francisco's sexual minorities established an enclave, SoMa developed into an important concentration of businesses, nightlife establishments, arts and health centers, and social institutions that served the needs of members of LGBTQ communities after 1950. At this time SoMa offered inexpensive rents and plentiful vacant spaces in the district's industrial and commercial buildings, which allowed socially marginalized people to establish institutions serving their community members somewhat out of the eye of the city's political and cultural mainstream.[51]

During the 1950s, the SoMa district was home to the national headquarters of the lesbian rights organization the Daughters of Bilitis, as well as the homophile group the Mattachine Society. Through the 1960s, 1970s, and 1980s, SoMa held a concentration of LGBTQ nightlife establishments, including bars, night clubs, and bathhouses. Some of the bars served lesbian clientele: one of these that operated in the mid-1960s, the Cheque Room at 1551–1559 Mission Street, was located within the Hub Plan area, and subsequently housed additional LGBTQ-associated businesses. The distinct LGBTQ enclave within and surrounding SoMa also included arts and culture organizations, LGBTQ-focused health clinics, and queer presses that published

---

48 Page & Turnbull, *San Francisco Filipino Heritage Addendum to the South of Market Historic Context Statement*, pp. 20–21.

49 Page & Turnbull, *Historic Context Statement, South of Market Area, San Francisco, California*, prepared for the San Francisco Planning Department, June 30, 2009, pp. 31–32.

50 San Francisco Board of Supervisors, Resolution 119-16, April 12, 2016.

51 Donna J. Graves and Shayne E. Watson, *Citywide Historic Context Statement for LGBTQ History in San Francisco*, prepared for the City and County of San Francisco, March 2016, p. 164.

a range of books, magazines, and newsletters that addressed LGBTQ cultural and political issues. The Women's Press Project, a feminist publishing and skills-building organization, operated out of the building at 95 Brady Street in the Hub Plan area during the 1980s.[52]

Among the first LGBTQ-associated establishments in SoMa were bars and bathhouses that catered to gay male patrons, particularly those who were affiliated with the leather community. Broadly defined, the leather subculture distinguished itself from mainstream gay male culture through an emphasis on hyper-masculinity and the use of leather dress and sexual accoutrements. The earliest leather bar, the Tool Box at 399 Fourth Street, began serving patrons in 1962. Numerous other gay leather bars followed, with the majority located along Folsom Street between Eighth and 12th streets. The southern end of the Folsom Street bar district—which became known in the gay community as the Valley of the Kings—lay southeast of the Hub Plan area. In addition, many gay bathhouses, nightclubs, and sex clubs were founded in the surrounding neighborhood to serve the gay leather subculture. This subculture and its associated bars and clubs in SoMa were especially hard hit by the AIDS crisis of the 1980s and 1990s as sex clubs and bathhouses were blamed by municipal officials and some mainstream gay male commentators for the spread of the epidemic; legal decisions forced such establishments to close.[53] In 2018, the San Francisco board of supervisors adopted a resolution creating the LGBTQ and Leather Cultural District, which is located south of Howard Street between Seventh and 13th streets and is immediately adjacent to the southeastern boundary of the Hub Plan area.[54] The California register-eligible SoMa LGBTQ Historic District, described under "Historic Districts in the CEQA Study Area" below, also recognizes the significant historic context of LGBTQ communities in the SoMa district. Two buildings identified as potential contributors to this district are located in the Hub Plan area: the Women's Press Project at 95 Brady Street and the Cheque Room at 1551–1559 Mission Street.[55]

Neither the SoMa Pilipinas–Filipino Cultural Heritage District nor the LGBTQ and Leather Cultural District qualifies as a historic district for the purpose of CEQA review. However, both districts are described above in order to provide social history context for the Hub Plan area.

---

52 Shayne E. Watson, *Historic Resources Evaluation, 280-282 7th Street, San Francisco, California*, July 20, 2017, prepared for Dragonfly Assets C-54, LLC, pp. 30–35.

53 Donna J. Graves and Shayne E. Watson, *Citywide Historic Context Statement for LGBTQ History in San Francisco*, prepared for the City and County of San Francisco, March 2016, p. 167.

54 San Francisco Board of Supervisors, Resolution No. 129-18, May 9, 2018.

55 Shayne E. Watson, *Historic Resources Evaluation, 280-282 7th Street*, pp. 51, 53.

Built-Environment Resources in the CEQA Study Area

The following section presents details regarding the built-environment resources in the CEQA study area that qualify as historical resources under CEQA. As described in the introduction to this section, a property is considered a historical resource under CEQA if it is listed in or formally determined eligible for listing in the California register; is included in an adopted local register; is identified as significant in a qualifying historical resource survey; or is otherwise determined by the CEQA lead agency to be historically significant.

This overview of built-environment resources in the CEQA study area is organized first to describe the historical resources that were identified prior to preparation of the Hub Plan EIR. This includes resources within the CEQA study area that have been designated under San Francisco Planning Code articles 10 and 11, thereby meeting the CEQA requirements for adopted local registers, and the built-environment surveys that have previously been conducted in the CEQA study area and have identified historical resources. Finally, this section describes the methodology and the results of the Hub Plan Historical Resources Survey (Hub Survey), which was undertaken to evaluate those properties within the CEQA study area that require new or updated historical resource evaluations for the current study. The locations of all built-environment resources in the CEQA study area are illustrated in **Figure 3.A-1**.

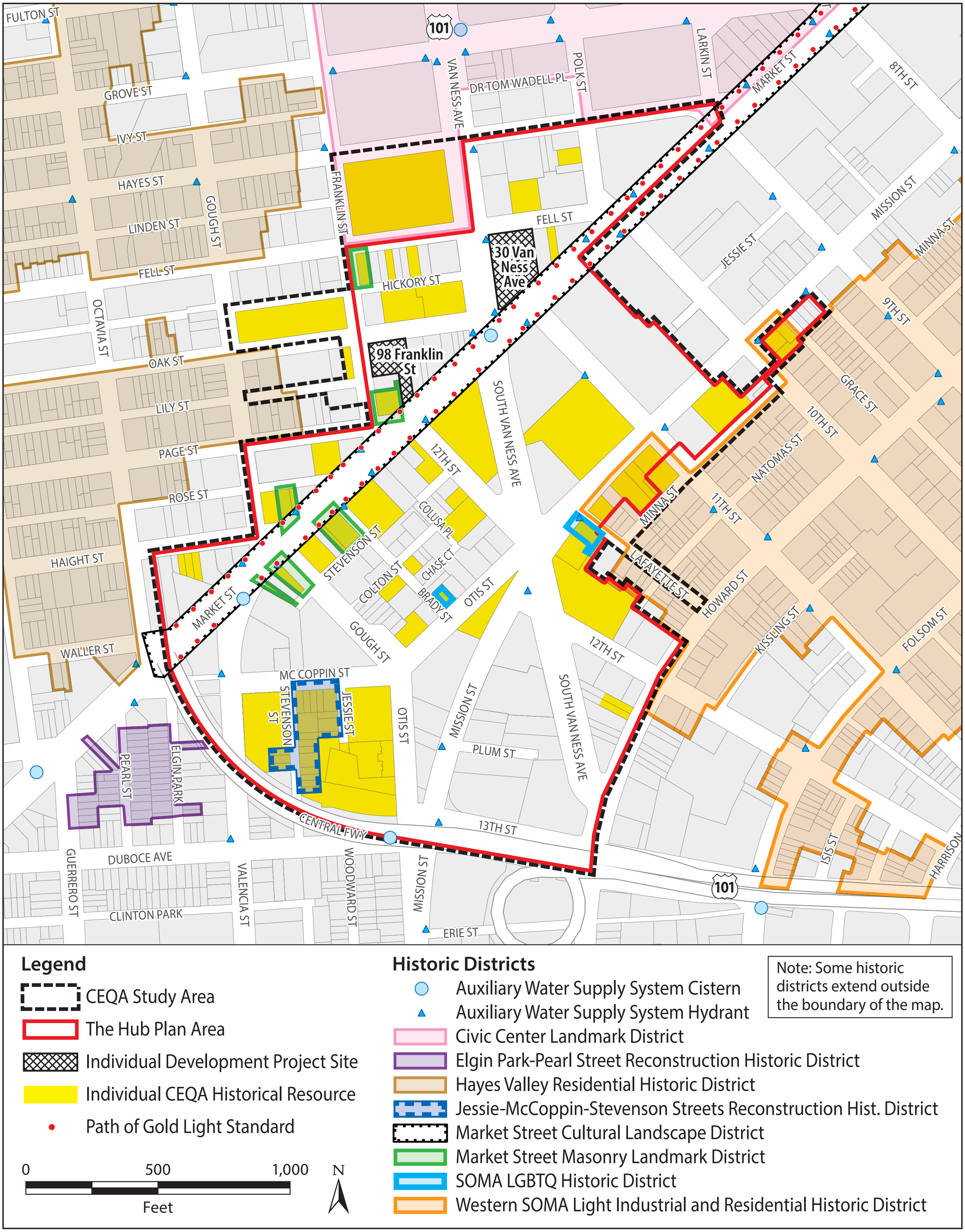
Articles 10 and 11, Local Registers

Articles 10 and 11 of the planning code establish registers of formally designated landmarks. Article 10 gives San Francisco the ability to identify and protect historic landmarks from inappropriate alterations. Landmarks designated under article 10 include buildings, sites, and objects; landmark districts are also designated under article 10. Article 11 allows the City to designate individual buildings and conservation districts in the C-3 Downtown Commercial zoning district that have architectural quality and contribute to the environment. The individual buildings designated under article 11 are assigned to one of five categories: Category I and II buildings are designated “Significant Buildings,” Category III and IV buildings are designated “Contributory Buildings,” and Category V buildings are designated “Unrated.”

Articles 10 and 11 are both adopted local registers of historical resources that meet the requirements of CEQA; therefore, any property that has been locally designated as an article 10 landmark; a category I, II, III, or IV building under article 11; or a contributor to an article 10 or 11 district is considered a CEQA historical resource. Article 11 Category V buildings are not considered CEQA historical resources on the basis of their article 11 designation.[56]

---

[56] San Francisco Planning Department, *San Francisco Preservation Bulletin No. 16: City and County of San Francisco Planning Department CEQA Review Procedures for Historic Resources,* March 2008, *https://sf-planning.org/sites/default/files/FileCenter/Documents/5340-PresBulletin16CEQA.pdf,* accessed December 10, 2018.



ICF Graphics ... 00700.17 (6-27-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.A-1
The Hub Plan Area Built Environment Resources

The CEQA study area contains three individual resources designated under article 10: the High School of Commerce at 135 Van Ness Avenue (Landmark No. 140), the Path of Gold light standards (Landmark No. 200), and the Juvenile Court and Detention Building at 150 Otis Street (Landmark No. 248). The CEQA study area also contains four buildings designated as categories I–IV under article 11: 50 Fell Street, the Masonic Temple at 25 Van Ness Avenue, the Young Men's Institute at 50 Oak Street, and the Miramar Apartments at 20 Franklin Street. Additional information on these individual historical resources is provided in **Table 3.A-2**, p. 3.A-33. The CEQA study area also contains all eight contributing buildings to the Market Street Masonry Landmark District, which is designated under article 10 and described in greater detail under "Historic Districts in the CEQA Study Area" below.

PREVIOUS BUILT-ENVIRONMENT SURVEYS

Numerous historical resources in the CEQA study area have previously been identified through documentation and evaluation in built-environment surveys. If the findings of a San Francisco survey have been adopted by the historic preservation commission, planning commission, or board of supervisors, the resources that the survey determines to be significant will qualify as belonging to a local register of historical resources and are considered CEQA historical resources. For federal undertakings, built-environment surveys may be conducted to identify historic properties in order to meet the requirements of section 106 of the National Historic Preservation Act. In these instances, if a property is determined eligible for listing in the national register of Historic Places and the State Historic Preservation Officer concurs with that determination, the property is automatically listed in the California register and is a CEQA historical resource.

Additional built-environment surveys in San Francisco that are not formally adopted by municipal review bodies or reviewed by the State Historic Preservation Officer may provide information that informs the subsequent identification of CEQA historical resources. The following outlines the previous built-environment surveys that have been conducted in the CEQA study area.

Locally Adopted Surveys

The following locally adopted surveys evaluated built-environment resources within the CEQA study area.

Here Today

In the 1960s, the Junior League of San Francisco conducted one of the first built-environment surveys in San Francisco, documenting approximately 2,500 properties. The organization published its findings in the book *Here Today: San Francisco's Architectural Heritage* (Here Today) in 1968.[57] The survey did not assign ratings to buildings or involve in-depth archival research or formal historical evaluation of the properties. On May 11, 1970, the findings of the Junior League survey were adopted by the San Francisco Board of Supervisors as Resolution No. 268-70. The survey qualifies as an official local historical register under CEQA.

Three buildings in the CEQA study area qualify as CEQA historical resources because of their inclusion in the Here Today survey: 37–47 Haight Street, 53–57 Haight Street, and 61–65 Haight Street. Additional information on these three resources is presented in **Table 3.A-2**, p. 3.A-33.

Market and Octavia Area Plan Historic Resource Survey and Augmentation Survey

Between 2000 and 2007, the San Francisco Planning Department (department) developed the Market and Octavia Area Plan, a neighborhood plan intended to promote connectivity, encourage housing development, preserve neighborhood character, and improve the public realm. The Market and Octavia Area Plan covers an irregularly shaped area that generally lies south of Turk Street, west of 10th Street, north of 16th Street, and east of Scott Street. The Market and Octavia Area Plan area encompasses nearly the entirely of the Hub Plan area.

During development of the Market and Octavia Area Plan, the department sponsored the Market and Octavia Area Plan Historic Resource Survey (Market and Octavia Survey). The Market and Octavia Survey involved documentation of approximately 1,500 historic-age buildings within the survey area at the reconnaissance level, using DPR 523A (Primary Record) forms. Following completion of a historic context statement that described physical development and historic context themes associated with the survey area, the department selected 155 resources, including historic districts with numerous contributing properties, to survey at the intensive level and evaluate for eligibility for listing in the national and California registers. The individual resources selected were documented on 523B (Building, Structure, and Object Record) forms; eligible historic districts were documented on 523D (District Record) forms. The findings of the Market and Octavia Survey, including the historic register evaluation of 155 individual historical resources and eight historic districts, were adopted by the San Francisco Historic Preservation Commission on February 19, 2009.

The Market and Octavia Augmentation Survey was undertaken between 2008 and 2011 to document additional properties within the Market and Octavia Area Plan area. The augmentation survey resulted in updates to the Hayes Valley Residential Historic District and provided California register evaluations for additional individual historical resources that did not receive an intensive-level survey during the original Market and Octavia Survey.

[57] The Junior League of San Francisco, *Here Today: San Francisco's Architectural Heritage*, Chronicle Books, 2nd Edition, 1968.

The Market and Octavia Survey and Market and Octavia Augmentation Survey determined that 28 individual built-environment resources in the CEQA study area qualify for recognition as historical resources under CEQA. These resources are listed in **Table 3.A-2**, p. 3.A-33.

Automotive Support Structures Survey

The Automotive Support Structures Survey, completed in 2010, involved the evaluation of properties near the Van Ness Avenue corridor that are associated with the development of the automobile industry in San Francisco during the first quarter of the 20th century. The boundaries of the survey area were generally delineated by Pacific Avenue to the north, Gough Street to the west, Mission Street to the south, and Larking Street to the east. During the survey, 112 automobile-related buildings were recorded and evaluated for California register eligibility using DPR form sets. Four of these buildings are located within the CEQA study area and are described in **Table 3.A-2**, p. 3.A-33. The findings of the Automotive Support Structures Survey were adopted by the San Francisco Historic Preservation Commission on July 21, 2010. The following four individual built-environment resources located within the CEQA study area were determined eligible for California register listing in the Automotive Support Structures Survey: the Balcom and Gigg Auto Wheel Aligning Company building at 159 Fell Street, Hotel Andree at 1663–1667 Market Street, 42–50 12th Street, and the Jeffrey Auto Sales Company Showroom at 56–70 12th Street.

South of Market Historic Resource Survey

Similar to the effort undertaken in support of the Market and Octavia Area Plan, the department sponsored the South of Market Area Historic Resource Survey (SoMa Survey) to inform development of the South of Market Area Plan. The SoMa Survey was conducted between 2009 and 2011 and involved a reconnaissance-level survey of the built environment within San Francisco's SoMa district as well as an intensive-level survey and California register evaluation of selected individual buildings and historic districts. The survey area defined for the SoMa Survey does not overlap the CEQA study area; however, one California register–eligible historic district identified in the SoMa Survey, the Western SoMa Light Industrial and Residential Historic District (described in greater detail below), extends slightly outside the SoMa Survey area and into the Hub Plan area. The findings of the SoMa Survey were adopted by the San Francisco Historic Preservation Commission on February 16, 2011.

The SoMa Survey did not identify any individually eligible historical resources within the Hub Plan area but did identify the Western SoMa Light Industrial and Residential Historic District, a portion of which extends into the Hub Plan area.

Central Freeway Replacement Project Historic Architecture Survey

In 1996, the California Department of Transportation conducted a survey of built-environment resources in support of the Central Freeway Replacement Project. This project sought to shorten the elevated Central Freeway (carrying U.S. 101) through the Hayes Valley neighborhood following damage the freeway sustained during the 1989 Loma Prieta earthquake. The Central Freeway Replacement Project brought the freeway to street level at Market and Octavia streets and removed the elevated structure north of Market Street. In addition, seismic strengthening was conducted on the remaining portions of the structure. Pursuant to section 106 of the National Historic Preservation Act, the California Department of Transportation completed its built-environment survey to identify historic properties in the project's Area of Potential Effect. Surveyed properties were documented on DPR 523A and 523B forms and evaluated for eligibility for listing in the national register. The survey was not conducted to inform CEQA review, and its findings were not adopted locally. However, the determinations of national register eligibility were formally reviewed by the State Historic Preservation Officer, followed by concurrence, as part of the section 106 compliance process. Any property found to be national register eligible in the Central Freeway Replacement Project Historic Architecture Survey was automatically listed in the California register and therefore qualifies as a CEQA historical resource.

The DPR forms and comprehensive findings of the Central Freeway Replacement Project Historic Architecture Survey are not publicly available on the department's Property Information Map. However, consultation with the department has revealed two properties in the Hub Plan area, the Bekins warehouse at 190–198 Otis Street and the Knights & Daughters of Pythias building at 135 Valencia Street, that qualify for recognition as CEQA historical resources because of their evaluation in this survey and eligibility for listing in the national register.[58,59]

Department of City Planning Architectural Quality Survey

The San Francisco Department of City Planning Architectural Quality Survey of 1976 (1976 DCP Survey) was a city reconnaissance survey that identified and rated architecturally significant buildings and structures, using a scale of 0 (contextual) to 5 (extraordinary). Potential historical significance was not considered when assigning a rating, and research regarding the history of the buildings and structures was not conducted. The 10,000 rated buildings and structures included in the survey accounted for only 10 percent of the city's architectural building stock but encompassed numerous properties that are within the Hub Plan area. The 1976 DCP Survey, which is illustrative of the relative value the DCP assigned buildings and structures at a particular point in time, is recognized by the department for informational purposes only. Recordation alone in the 1976 DCP Survey does not qualify a property for recognition as a

---

58 California Department of Transportation, 190-198 Otis Street, State of California Department of Parks and Recreation Primary Record and Building, Structure, and Object Record Form. Completed for the *Historic Architecture Survey Report for the Central Freeway Replacement Project in the City of San Francisco*, 1997.

59 California Department of Transportation, 101-129 Valencia Street, State of California Department of Parks and Recreation Primary Record and Building, Structure, and Object Record Form. Completed for the *Historic Architecture Survey Report for the Central Freeway Replacement Project in the City of San Francisco*, 1997.

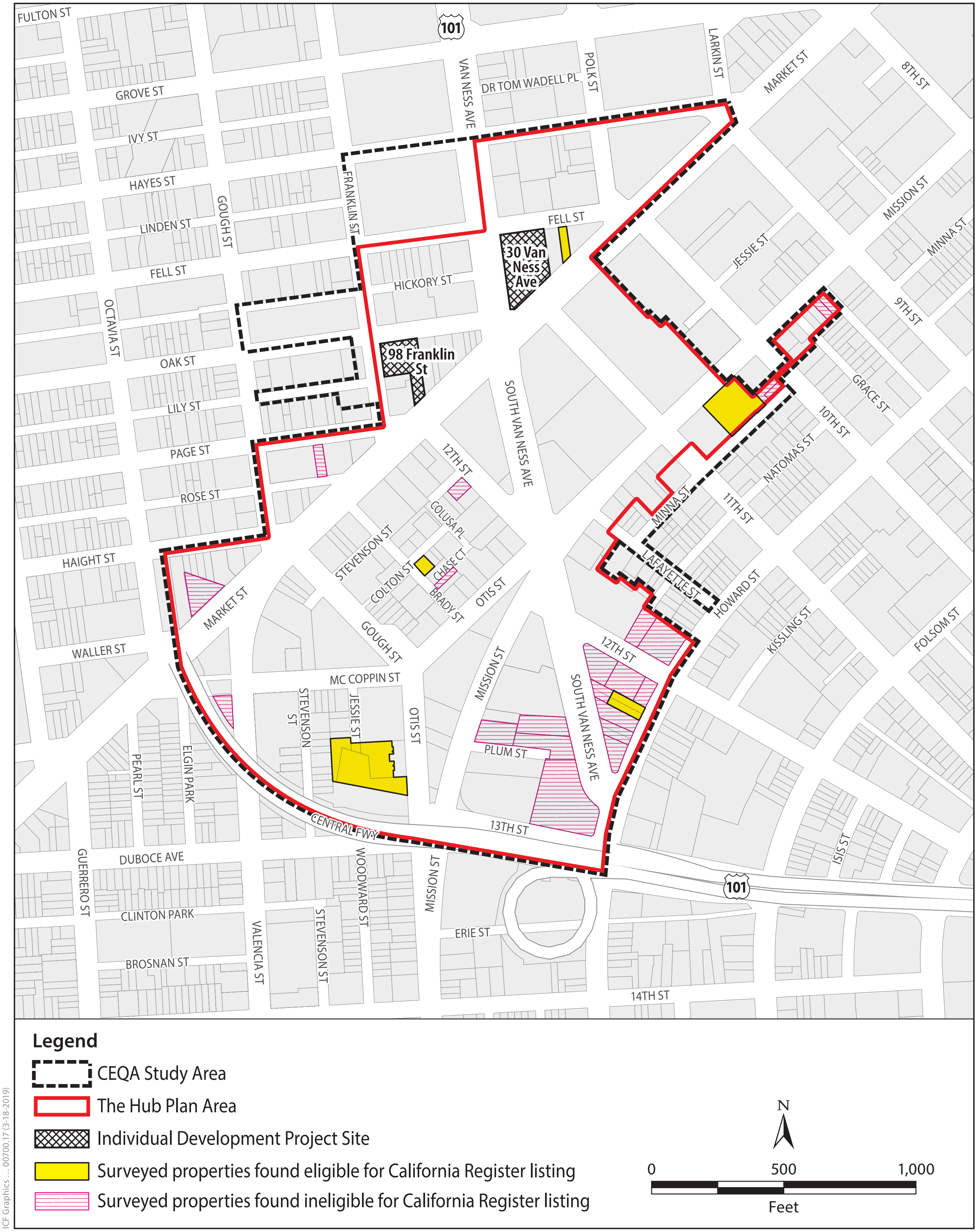
historical resource for the purposes of CEQA. However, the ratings assigned in the 1976 DCP Survey can provide information that supports future determinations during the CEQA review process.

HUB PLAN HISTORICAL RESOURCES SURVEY

The Hub Survey was conducted between 2018 and 2019 to develop a comprehensive inventory of all properties within the Hub Plan area, along with current California register eligibility findings. The survey area was defined as the CEQA study area. Most of the historic-age properties (more than 45 years old) within the CEQA study area had previously been surveyed and evaluated during the Market and Octavia or SoMa surveys, through local designation, or through the CEQA review process. All individual built-environment resources within the Hub Plan area were examined to assess whether past evaluations or designations existed, and to determine whether existing historic register evaluations were current. This effort determined that 26 historic-age built-environment resources within the Hub Plan area had not been previously evaluated for historic resource status or required updated documentation and California register evaluation. Through consultation with the department, it was determined that one additional property that was not yet 45 years in age, 170 Otis Street, also required evaluation for California register eligibility because sufficient time had passed to develop a scholarly perspective on its potential significance. The locations of the 27 properties surveyed in the Hub Survey are represented in **Figure 3.A-2**.

Some resources identified as requiring new evaluation in the Hub Survey were located in the survey areas of the Market and Octavia and SoMa surveys but had not previously been evaluated for California register eligibility. In some instances, this was because the properties had not been among those selected for intensive-level survey and California register evaluation. In other instances, a property did not qualify as historic-age at the time of the previous survey.

Several properties in the Hub Plan area had an existing designation or historic register evaluation that was determined not to be sufficient for the purposes of the current study. One building, 1438–1444 Market Street, was designated under Category 11 as a Category V "unrated" building, meaning that it was included in a local register but did not qualify as a CEQA historical resource. The building at 1663–1667 Mission Street was documented and evaluated in the Central Freeway Replacement Project Historic Architecture Survey and was found to be ineligible for listing in the national register. The building at 1663–1667 Mission Street was included in the survey population of the Hub Survey because the building did not have a documented evaluation for California register eligibility. One additional building, 1740–1760 Market Street, was previously evaluated in the Market and Octavia Survey and determined to be ineligible for listing in the California register. However, 1740–1760 Market Street required reevaluation because it was identified in the 2015 *Citywide Historic Context Statement for LGBTQ History in San Francisco* as having associations with San Francisco's LGBTQ social and cultural history.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.A-2
Properties Surveyed in the Hub Plan Historical Resources Survey

Built-environment resources identified as requiring new documentation were evaluated as individual resources during the Hub Survey using the evaluative criteria of the California register. Surveyed resources could be determined to be significant for their associations with historic contexts that took place less than 45 years ago if it can be demonstrated that sufficient time has passed to develop a scholarly perspective on the resource's significance.

Of the 27 built-environment resources within the Hub Plan area that were evaluated during the Hub Survey, five were determined eligible for listing in the California register and, thus, are CEQA historical resources:

- San Francisco Women's Centers, 55–63 Brady Street
- San Francisco Cannabis Buyers Club, 1438–1444 Market Street
- Gantner & Mattern Company Building, 1453 Mission Street
- 1618–1624 Howard Street
- San Francisco Human Services Agency, 170 Otis Street

All DPR form sets completed for the Hub Survey are included in Appendix C.

Individual Built-Environment Resources in the CEQA Study Area

As described above, individual built-environment resources within the CEQA study area, which consist of buildings and objects, were evaluated as CEQA historical resources during built-environment surveys, through local designation efforts, and through resource evaluations conducted for development projects, pursuant to the department's CEQA review process. Those resources located in the CEQA study area are listed in **Table 3.A-2**, p. 3.A-33, and shown in **Figure 3.A-1**, p. 3.A-20.[60] **Table 3.A-2**, p. 3.A-33, presents each property's address, Assessor's Parcel Number(s), and existing designation that qualifies it as a CEQA historical resource. If a property has been evaluated in a built-environment survey, the name of the applicable survey and the property's assigned survey rating is stated. A brief significance summary is also provided for each resource, which describes the evaluative criterion under which it is significant as well as its period of significance.

Historic Districts in the CEQA Study Area

In addition to individual built-environment resources, the CEQA study area overlaps with several historic districts. The National Park Service defines a historic district as an entity that "possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united

[60] The building at 14–18 Otis Street, located within the CEQA study area, was identified as a historical resource in the Market and Octavia Survey. However, 14–18 Otis Street underwent separate environmental review under Case No. 2015-010013ENV and was approved for demolition following the issuance of the NOP for this EIR. 14–18 Otis Street is not a historical resource for the purposes of the current EIR and is not included in the table of built-environment resources.

historically or aesthetically by plan or physical development."[61] Eight historic districts that were identified in previous built-environment surveys are entirely or partially within the CEQA study area. One additional historic district is located adjacent to the CEQA study area. The locations of the nine historic districts within or adjacent to the Hub Plan area are shown in **Figure 3.A-1**, p. 3.A-20. Buildings within the CEQA study area that contribute to these historic districts are listed in **Table 3.A-2**, p. 3.A-33.

The following summarizes the general characteristics, applicable historic register evaluative criteria, and identified periods of significance for the eight historic districts located entirely or partially within the CEQA study area:

- **Civic Center Landmark District:** The Civic Center Landmark District is locally designated under article 10 of the planning code. The article 10 landmark district fully encompasses the smaller boundaries of the Civic Center National Historic Landmark District and Civic Center National Register Historic District, which were delineated during earlier evaluations. One parcel along the southern boundary of the Civic Center Landmark District, the High School of Commerce at 135 Van Ness Avenue, extends into the CEQA study area. The district contains numerous contributing buildings and character-defining cultural landscape features centered around San Francisco City Hall and Civic Center Plaza. The district's local and national designations recognize its significance under national register/California register Criteria A/1 (Events), related to important developments in San Francisco urban planning during the first half of the 20th century, and under national register/California register Criteria C/3 (Architecture), related to the formal Beaux Arts architecture and City Beautiful planning and landscape design principles that established a unified urban district containing some of San Francisco's most important civic institutions. The district's period of significance is 1896–1951. Character-defining features of the district that are located on the block within the CEQA study area include the High School of Commerce, granite curb, brick paving along Van Ness Avenue, and single-pendant streetlight.
- **Hayes Valley Residential Historic District:** The Hayes Valley Residential Historic District was first determined to be eligible for listing in the national register through survey evaluation in 1997. The boundary of the district was expanded in the Market and Octavia Survey, which documented the district's eligibility for listing in the California register under Criterion 3. The southeastern boundary of the Hayes Valley Residential Historic District lies adjacent to the northwestern boundary of the Hub Plan area. The district's contributing buildings are spread across approximately 30 city blocks. The district is significant as a unified collection of Victorian- and Edwardian-era residential architecture. The district's period of significance is 1860–1920.

---

[61] National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, *https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_4.htm*, accessed July 2, 2019.

- **Jessie-McCoppin-Stevenson Streets Reconstruction Historic District:** The Market and Octavia Survey determined that the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District is eligible for listing in the California register under Criterion 1 (Events). This district, which is entirely within the Hub Plan area, consists of two- or three-story residential buildings across two city blocks that date to the immediate reconstruction period following the 1906 earthquake. The DPR 523D form completed for the district specifies that the resource contains 15 contributing buildings. Its period of significance is defined as 1906–1912.
- **Market Street Cultural Landscape District:** The Market Street Cultural Landscape District encompasses the Market Street corridor between The Embarcadero and Octavia Boulevard; as such, the western portion of the cultural landscape district extends through the northern half of the Hub Plan area. The Market Street Cultural Landscape District was determined eligible for listing in the national and California register by the *Better Market Street Project Cultural Landscape Evaluation*, completed in 2016; the findings of the cultural landscape evaluation were identified by the department through the CEQA review process in 2017.[62] The *Better Market Street Project Cultural Landscape Evaluation* was prepared to support the identification of historical resources for the Better Market Street Project EIR, which includes the district as one of the identified historical resources within the area of the Better Market Street Project. The Market Street Cultural Landscape District encompasses the Market Street streetscape, inclusive of roadways, sidewalks, plazas, small-scale features (e.g., street furniture, monuments, and light standards), and viewsheds, between The Embarcadero and Octavia Boulevard. The district is eligible for listing in the national and California register under Criteria A/1 as San Francisco's main circulation artery and facilitator of urban development (period of significance 1847–1929) and as a significant venue for civic engagement in San Francisco (period of significance 1870s–1979). The district is furthermore eligible for national and California register listing under Criteria C/3 (Architecture and Design) for the design of the Market Street Redevelopment Plan streetscape developed by Lawrence Halprin & Associates, John Carl Warnecke & Associates, and Mario Ciampi & Associates (period of significance 1979).
- **Market Street Masonry Landmark District:** The Market Street Masonry Landmark District is a discontiguous historic district,[63] locally designated under article 10 of the planning code. The district contains the following eight contributing brick masonry

[62] San Francisco Planning Department, *Historic Resource Evaluation Response, Market Street – Better Market Street Project*, July 2017. This document is on file and available for public review as part of Case File No. 2014.0012E.

[63] Although characterized as a discontiguous historic district, some district contributors are adjacent to one another.

buildings adjacent to or near the Market Street corridor southwest of its intersection with Van Ness Avenue: Miramar Apartments, 20 Franklin Street; Whiteside Apartments, 150 Franklin Street; Edward McRoskey Mattress Factory Company, 65 Gough Street; 1649–1655 Market Street; Hotel Ascot, 1657 Market Street; 1666–1668 Market Street; Gaffney Building, 1670–1680 Market Street; and Hotel Fallon, 1693–1695 Market Street. All eight buildings that contribute to the Market Street Masonry Landmark District are within the Hub Plan area. The district's local designation recognizes its significance under California register Criterion 3, which is related to physical development of the Market Street corridor and the contributing buildings' architectural design. The district's period of significance is 1911–1925.

- **San Francisco Auxiliary Water Supply System:** The AWSS is a discontiguous[64] historic district that has been determined to be eligible for national and California register listing under Criteria A/1 and C/3 for its association with post-1906 earthquake reconstruction and engineering in San Francisco, with a period of significance of 1906–1913. The district was first documented on DPR 523A and 523D forms 2009; an updated and expanded recordation of the AWSS was completed in 2018 to inform the CEQA and section 106 review processes for the Better Market Street Project. The AWSS, a citywide gravity-fed water supply system for fire suppression that comprises numerous buildings, structures, and infrastructural features, extends across the Hub Plan area and beyond. Elements that contribute to the AWSS and are present within the Hub Plan area include the numerous high-pressure water hydrants within the public right-of-way along Market Street, Mission Street, 11th Street, and Van Ness Avenue, in addition to three sub-surface cisterns within or near the intersections of Market Street and Van Ness Avenue, Market Street and Valencia Street, and Otis Street and Mission Street.
- **SoMa LGBTQ Historic District:** The SoMa LGBTQ Historic District was determined to be eligible for California register listing through the department's CEQA review process in 2017. As identified in the *280–282 Seventh Street Historic Resource Evaluation*, adopted by the department in 2017, this discontiguous district contains a range of property types across the SoMa LGBTQ Historic District that includes commercial and nightlife establishments, social movement organizational headquarters, community centers, publishing houses, medical facilities, residences, and arts institutions. Supported by information contained in the 2015 *Citywide Historic Context Statement for LGBTQ History in San Francisco*, the 2017 historic resource evaluation determined the SoMa LGBTQ Historic District to be significant under California register Criteria 1 and 2, in acknowledgment of the sustained presence of LGBTQ-identified communities and individuals within the

64 The AWSS is characterized as a discontiguous historic district because some of its contributing features, such as cisterns, are not physically connected to the remainder of the system. However, all elements of the AWSS are functionally linked.

SoMa area during the historic district's proposed period of significance, 1950s–1980s. A comprehensive historical resource study has not yet been undertaken to conclusively define the district's boundaries and contributing resources. However, the 2017 historic resource evaluation proposed a list of approximately 100 potential contributing resources to the SoMa LGBTQ Historic District, which are geographically dispersed between Third Street to the northeast and 15th Street to the southwest. Two of the proposed contributors to the SoMa LGBTQ Historic District within the Hub Plan area are the Grace Perezo Building at 95 Brady Street and 1551–1559 Mission Street.

- **Western SoMa Light Industrial and Residential Historic District:** The Western SoMa Light Industrial and Residential Historic District was identified and evaluated as eligible for listing in the California register in the 2009–2011 SoMa Survey. This district, which is generally bounded by Mission Street to the north, 13th Street to the west, Harrison and Bryant streets to the south, and Fifth Street to the east, covers much of the western portion of the SoMa area and contains approximately 686 contributing resources, which include primarily properties that historically had residential and light industrial uses. The Western SoMa Light Industrial and Residential Historic District is eligible under California register Criteria 1 and 3 for its associations with the physical development of the SoMa neighborhood in the early 20th century and its large number of architecturally notable industrial and residential buildings; it has a period of significance of 1906–1936. The boundary of the Western SoMa Light Industrial and Residential Historic District overlaps slightly with the southwestern boundary Hub Plan area; 11 sites within the boundary of the historic district are also within the Hub Plan area. These 11 sites within the Hub Plan area contain six contributing buildings in the Western SoMa Light Industrial Residential Historic District: 1375–1385 Mission Street, 1517 Mission Street; 1525 Mission Street; and 1543 Mission Street, 1084–1094 Natoma Street, and 1016–1020 Minna Street.

The following additional historic district is adjacent to the CEQA study area and, as such, also has the potential to sustain an indirect impact on its setting as a result of program- and project-level activities:

- **Elgin Park-Pearl Street Reconstruction Historic District:** The Elgin Park-Pearl Street Reconstruction Historic District was found eligible for listing in the California register in the Market and Octavia Survey under Criterion 1. The district is a concentration of two- to three-story residential flats buildings primarily located south of Market Street between Pearl Street and Elgin Park; the district boundary extends east to encompass one parcel that is adjacent to the Central Freeway on-ramp at Octavia Boulevard, such that the eastern boundary of the district is adjacent to the western boundary of the Hub Plan area. The Elgin Park-Pearl Street Reconstruction Historic District contains 35 contributors that represent the residential reconstruction of San Francisco's neighborhoods following the 1906 earthquake. The district's period of significance is 1906–1913.

Table 3.A-2, p. 3.A-33, lists the individual built-environment resources and historic districts in the CEQA study area that qualify as historical resources.

ARCHAEOLOGICAL SETTING

This subsection describes the archaeological resources from the prehistoric and historic periods and provides assessments of archaeological sensitivity in the Hub Plan area, as presented in the ARDTP.[65]

ARCHAEOLOGICAL RESOURCES FROM THE PREHISTORIC PERIOD

This section describes archaeological resources from the prehistoric period, as presented in the ARDTP.

Recorded Prehistoric Archaeological Investigations in the Project and Vicinity

As noted in the Hub ARDTP, a records search at the Northwest Information Center identified three archaeological resources that had been previously documented in or adjacent to the Hub Plan area: CA-SFR-28, CA-SFR-136/H, and CA-SFR-148. Brief descriptions of each resource are provided below. **Table 3.A-3**, p. 3.A-49, provides additional context for each resource.

CA-SFR-28: Originally identified at a depth of 70 feet below the ground surface during construction of the Civic Center Bay Area Rapid Transit (BART) station, CA-SFR-28 consists of a set of human remains that appear to have been deposited in estuarine silts approximately 5,630 years ago. The site is just northeast of the northern edge of the Hub Plan area. Subsequent geoarchaeological studies performed in the 1075 Market Street vicinity, several blocks north of the Hub Plan area, have more precisely mapped local stratigraphy and landscape change in this area. CA-SFR-28 appears to no longer be extant, although no formal determination of national or California register eligibility has been made.

CA-SFR-136/H: Originally identified at depths ranging from 6 to 9 feet below the ground surface during preconstruction testing for the Howard Street Affordable Housing Project, CA-SFR-136/H consists of a small and localized prehistoric deposit, including stone tools, shellfish, and faunal remains intermixed with historical artifacts. The resource is mapped as being located at 1166 Howard Street, which is outside (east) of the Hub Plan area by approximately 0.18 mile. Considering the mixed nature of the deposit, it was not considered significant and was completely removed during the project. However, it is important to note that the northern and northeastern boundaries of the resource (outside the Hub Plan area) were not defined during the project.

---

65 ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018, pp. 3-1 to 3-32. This document contains sensitive archaeological information and is confidential.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
50 Fell Street	0814/010	Article 11	N/A	50 Fell Street is locally designated as an individual resource under local criteria related to architecture, with a period of significance of 1931.
55 Polk Street	0814/019	Market and Octavia Augmentation Survey	3CS	55 Polk Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1906-1929.
135 Van Ness Avenue; High School of Commerce	0815/001	Article 10; National Register	N/A	135 Van Ness Avenue is locally designated as an individual resource under local criteria related to architecture and history, with a period of significance of 1926. 135 Van Ness Avenue is a contributor to the Civic Center Landmark District, which is significant under Criteria A/1 and Criteria C/3 and has a period of significance of 1896–1951.
150 Oak Street	0833/033	Market and Octavia Survey	3CS	150 Oak Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1950.
25 Van Ness Avenue/25 Hickory Street; Masonic Temple	0834/004	Article 11	N/A	25 Van Ness Avenue is locally designated as an individual resource under local criteria related to architecture, with a period of significance of 1910.

66 "N/A" indicates that a property was evaluated in a survey that did not assign rating codes (such as *Here Today*) or qualified as a historical resource because it was listed in a local inventory.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
150 Franklin Street; Whiteside Apartments	0834/012	Article 10; Market and Octavia Augmentation Survey	3CS	150 Franklin Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 150 Franklin Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.
159 Fell Street; Balcom and Gigg Auto Wheel Aligning Co.	0834/015	Automotive Support Structures Survey	3CS	159 Fell Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1926–1961.
145 Fell Street; St. Cecile Hotel	0834/018	Market and Octavia Augmentation Survey	3CS	145 Fell Street is eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.
50 Oak Street; Young Men's Institute	0834/027	Article 11	N/A	50 Oak Street is locally designated as an individual resource under local criteria related to architecture, with a period of significance of 1914.
1438–1444 Market Street; San Francisco Cannabis Buyers Club	0835/002	Hub Survey	3CS	1438–1444 Market Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1995–1998.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
20 Franklin Street/1580–1598 Market Street; Miramar Apartments	0836/010	Article 10; Article 11; Market and Octavia Augmentation Survey	3CS	20 Franklin Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 20 Franklin Street is also locally designated as an individual resource under local criteria related to architecture, with a period of significance of 1912. 20 Franklin Street is also eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1926.
41 Franklin Street	0837/001	Market and Octavia Augmentation Survey	3CS	41 Franklin Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1906–1926.
1632 Market Street	0854/002	Market and Octavia Survey	5S3	1632 Market Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1911.
1666–1668 Market Street	0854/004	Article 10; Market and Octavia Augmentation Survey	3CS	1666–1668 Market Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 1666–1668 Market Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1670–1680 Market Street; Gaffney Building	0854/005	Article 10; Market and Octavia Augmentation Survey	3CS	1670–1680 Market Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 1670-1680 Market Street is also eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1906–1926.
64–78 Gough Street; Finck Building	0854/006	Market and Octavia Survey	3CS	64–78 Gough Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1911.
61–65 Haight Street	0855/004	*Here Today*	N/A	61-65 Haight Street is assumed significant under California register Criterion 3, with a period of significance of 1900.
37–47 Haight Street	0855/013	*Here Today*; Market and Octavia Augmentation Survey	3S	37–47 Haight Street is assumed significant under Criterion 3, with a period of significance of 1900. 37–47 Haight Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1870–1906.
53–57 Haight Street	0855/012	*Here Today*; Market and Octavia Augmentation Survey	3S	53–57 Haight Street is assumed significant under Criterion 3, with a period of significance of 1900. 53–57 Haight Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1870–1906.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1649–1655 Market Street	3504/001	Article 10; Market and Octavia Augmentation Survey	3CS	1649–1655 Market Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 1649-1655 Market Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.
60 Brady Street; F. Muller Building	3504/013	Market and Octavia Survey	5S3	60 Brady Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1969–1978.
2 Gough Street/86 Otis Street	3504/019	Market and Octavia Survey	5S3	2 Gough Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1910.
1693–1695 Market Street; Hotel Fallon	3504/038	Article 10; Market and Octavia Augmentation Survey	3CS	1693–1695 Market Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 1683–1695 Market Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1687 Market Street/65 Gough Street; Edward McRoskey Mattress Factory	3504/040	Article 10; Market and Octavia Survey	3CS	1687 Market Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 1687 Market Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1925–1961.
1663–1667 Market Street; Hotel Andree	3504/044	Automotive Support Structures Survey	3CS	1663–1667 Market Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1920–1921.
1657 Market Street; Hotel Ascot	3504/046	Article 10; Market and Octavia Augmentation Survey	3CS	1657 Market Street is a contributor to the Market Street Masonry Landmark District, which is locally designated under criteria related to significant events and architecture, with a period of significance of 1911–1925. 1657 Market Street is also eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.
1601–1605 Market Street/20 12th Street; Civic Center Hotel	3505/001	Market and Octavia Survey; Local CEQA Review	3CS	1601—1605 Market Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1915.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
42–50 12th Street	3505/005	Automotive Support Structures Survey	3CS	42–50 12th Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1922–1934 and 1938–1964.
56–70 12th Street; Jeffrey Auto Sales Co. Showroom	3505/009	Automotive Support Structures Survey	3CS	56–70 12th Street is eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1912–-1918.
95 Brady Street/50–60 Otis Street; Women's Press Project	3505/021	Market and Octavia Survey; Local CEQA Review	5S3	95 Brady Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1920. 95 Brady Street is also a contributor to the SoMa LGBTQ Historic District, which is eligible for listing in the California register under Criteria 1 and 2, with a period of significance of circa 1950s–1980s.
55–63 Brady Street; San Francisco Women's Centers	3505/025	Hub Survey	3CS	55-63 Brady Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1973–1979.
1629–1637 Market Street	3505/032	Market and Octavia Survey; Local CEQA Review	3CS	1629-1637 Market Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1926.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
10 South Van Ness Avenue/ 1535–1599 Mission Street; Fillmore West	3506/004	Market and Octavia Survey; Local CEQA Review	5S3	10 South Van Ness Avenue is eligible for listing in the California register as an individual resource under Criteria 1 and 2, with a period of significance of 1968–1971.
1500 Mission Street; Coca-Cola Bottling Works/ White Motor Co.	3506/006; 3506/008-011	Van Ness Auto Row Support Structures Survey; Local CEQA Review	3CS	1500 Mission Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1941.
1375–1385 Mission Street	3509/040	SoMa Survey	3D	1375–1385 Mission Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.
1453 Mission Street/950 Minna Street; Gantner & Mattern Company Building	3510/057	Hub Survey	3CS	1453 Mission Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1913.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1513 Mission Street; Firestone Tire Building	3511/001	SoMa Survey; Market and Octavia Augmentation Survey	3D; 3CS	1513 Mission Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936. 1513 Mission Street is also eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1929–1950.
120 11th Street	3511/003	SoMa Survey	3D	120 11th Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.
1563 Mission Street	3511/031	Market and Octavia Augmentation Survey	3CS	1563 Mission Street is eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1906–1929.
1551–1559 Mission Street	3511/033	Local CEQA Review	N/A	1551–1559 Mission Street is a contributor to the SoMa LGBTQ Historic District, which is eligible for listing in the California register under Criteria 1 and 2, with a period of significance of circa 1950s–1980s.
1084–1094 Natoma Street	3511/044	SoMa Survey	3D	1084–1094 Natoma Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1016–1020 Minna Street	3511/073	SoMa Survey	3D	1016-1020 Minna Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.
1517 Mission Street	3511/074	SoMa Survey	3D	1517 Mission Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.
1525 Mission Street; Herbst Bros. Wholesale Hardware Store	3511/075	SoMa Survey; Market and Octavia Augmentation Survey	3D; 3CS	1525 Mission Street is eligible for listing in the California register as an individual resource under Criterion 1, with a period of significance of 1906–1929. 1525 Mission Street is also a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.
1543 Mission Street	3511/080	SoMa Survey	3D	1543 Mission Street is a contributor to the Western SoMa Light Industrial and Residential Historic District, which is eligible for listing in the California register under Criteria 1 and 3, with a period of significance of 1906–1936.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
99 South Van Ness Avenue/40 Lafayette Street; Recorder Printing Company Building	3511/093	Market and Octavia Augmentation Survey	3CS	99 South Van Ness Avenue is eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1929–1950.
1600 Mission Street; Granfields Service Station	3512/001	Market and Octavia Augmentation Survey	3S	1600 Mission Street is eligible for listing in the California register as an individual resource under Criteria 1 and 3, with a period of significance of 1926–1950.
1 McCoppin Street/100–136 Otis Street; Pacific Telephone Building	3513/001	Market and Octavia Survey	3CS	1 McCoppin Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1937.
170 Otis Street/ 1350 Jessie Street; San Francisco Human Services Agency	3513/008, 081, 082, 207	Hub Survey	3CS	170 Otis Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1978.
1338–1342 Stevenson Street	3513/030	Market and Octavia Survey	3CD	1338–1342 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1363–1365 Stevenson Street	3513/045	Market and Octavia Survey	3CD	1363–1365 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
1353–1357 Stevenson Street	3513/047	Market and Octavia Survey	3CD	1353–1357 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
1339 Stevenson Street	3513/049	Market and Octavia Survey	3CD	1339 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
1335–1337 Stevenson Street	3513/050	Market and Octavia Survey	3CD	1335–1337 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
1331–1333 Stevenson Street	3513/051	Market and Octavia Survey	3CD	1331–1333 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1307–1329 Stevenson Street	3513/052	Market and Octavia Survey	3CD	1307–1329 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
57–61 McCoppin Street	3513/055	Market and Octavia Survey	3CD	57–61 McCoppin Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
51–55 McCoppin Street	3513/056	Market and Octavia Survey	3CD	51–55 McCoppin Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
45–47 McCoppin Street	3513/057	Market and Octavia Survey	3CD	45–47 McCoppin Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
33–43 McCoppin Street	3513/058	Market and Octavia Survey	3CD	33–43 McCoppin Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
1312–1314 Jessie Street	3513/059	Market and Octavia Survey	3CD	1312–1314 Jessie Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
1334 Jessie Street	3513/062	Market and Octavia Survey	3CD	1334 Jessie Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic DISTRICT, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
33–43 McCoppin Street	3513/058	Market and Octavia Survey	3CD	33–43 McCoppin Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
1316–1330 Jessie Street	3513/077	Market and Octavia Survey	3CB	1316-1330 Jessie Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906-1912.
190–198 Otis Street; Bekins Company Warehouse	3513/080	Central Freeway Replacement Project Historic Architecture Survey	3S	190–198 Otis Street is eligible for listing in the national register as an individual resource under Criteria A and C, with a period of significance of 1905–1909.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
135 Valencia Street; Knights & Daughters of Pythias Building	3513/083-195	Central Freeway Replacement Project Historic Architecture Survey	3S	135 Valencia Street is eligible for listing in the national register as an individual resource under Criteria A and C, with a period of significance of 1910–1947.
1350–1354 Stevenson Street	3513/196-201	Market and Octavia Survey	3CD	1350–1354 Stevenson Street is a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, which is eligible for listing in the California register under Criterion 1, with a period of significance of 1906–1912.
150 Otis Street; Juvenile Court and Detention Center	3513/208	Article 10	N/A	150 Otis Street is locally designated as an individual resource under local criteria related to architecture, with a period of significance of 1916.
1618–1624 Howard Street	3514/005	Hub Survey	3CS	1618–1624 Howard Street is eligible for listing in the California register as an individual resource under Criterion 3, with a period of significance of 1910.
Path of Gold Light Standards	N/A	Article 10	N/A	The Path of Gold Light Standards is locally designated as an individual resource under local criteria related to architecture, with a period of significance of 1908–1916.
San Francisco Auxiliary Water Supply System	N/A	Local CEQA Review	3	The Auxiliary Water Supply System is eligible for listing in the national register and California register as a historic district under Criteria A/1 and C/3, with a period of significance of 1908–1913.

TABLE 3.A-2. BUILT-ENVIRONMENT RESOURCES IN THE CEQA STUDY AREA

Address; Resource Name (as applicable)	APN(s)	Designation/Eligibility	Assigned Survey Rating (as applicable)[66]	Significance Summary
Market Street Cultural Landscape District	N/A	Local CEQA review	N/A	The Market Street Cultural Landscape District is eligible for listing in the California register as a historic district under Criteria 1 and 3, with periods of significance of 1847–1929 and 1870s–1979 (Criterion 1) and 1979 (Criterion 3).

California Historical Resource Status Codes:

3 = Appears eligible for national register or California register through survey evaluation.

3CD = Appears eligible for California register as a contributor to a California register–eligible district through a survey evaluation.

3CS = Appears eligible for California register as an individual property through survey evaluation.

3D = Appears eligible for national register as a contributor to a national register–eligible district through survey evaluation.

3S = Appears eligible for national register as an individual property through survey evaluation

5S3 = Appears to be individually eligible for local listing or designation through survey evaluation.

APN = Assessor's Parcel Number

California register = California Register of Historical Resources

CEQA = California Environmental Quality Act

LGBTQ = lesbian, gay, bisexual, transgender, and queer

N/A = not applicable

national register = national register of Historic Places

SoMa = South of Market

TABLE 3.A-3. PREVIOUSLY DOCUMENTED ARCHAEOLOGICAL RESOURCES IN THE HUB PLAN AREA

Trinomial/ Site Name	Reference	Location	Depth	Features	California Register or National Register Eligibility
CA-SFR-28	Kaijankoski and Meyer, 2016; Henn & Scenck, 1972.	Outside the northern edge of the Hub Plan area.	70 feet below ground surface (bgs)	Set of human remains.	Not formally evaluated; however, no longer extant.
CA-SFR-136/H	Vanderslice, 2002	Outside the Hub Plan area at 1166 Howard Street.	6 to 9 feet bgs.	Stone tools, shellfish, faunal remains, and historical artifacts.	Not formally evaluated.
CA-SFR-148	Crawford, 2005; Ramos, 2003	Within the western portion of the Hub Plan area.	6 to 10 feet bgs.	Shellfish fragments, vertebrate faunal remains, and stone tools and debitage.	Not formally evaluated.

Source: ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018, p. 4-11. This document contains sensitive archaeological information and is confidential.

California register = California Register of Historical Resources

national register = National Register of Historic Places

CA-SFR-148: Originally identified at depths ranging from 6 to 10 feet below the ground surface during preconstruction excavations for the San Francisco Central Freeway Replacement Project, Alternative 8B, CA-SFR-148 is entirely within the western portion of the Hub Plan area. It consists of an ephemeral prehistoric midden deposit. The midden deposit contained shellfish fragments, vertebrate faunal remains, and stone tools and debitage, the byproduct of lithic tool production (e.g., lithic flakes, shatter, blades, rejected tools).

Archaeological Sensitivity and Potential Prehistoric Archaeological Property Types in the Hub Plan Area and Vicinity, Based on Landform Analysis

This section uses the findings of a geoarchaeological landform analysis performed for the project in the Hub Plan area to gauge the potential for encountering buried archaeological resources and to determine the range of archaeological property types that could be encountered. The full analysis is included in the Hub ARDTP. Landforms are useful analytical units for considering the relationship between landscape history and human activities because each type has a unique set of physical attributes (e.g., age, depositional environment, stability, accessibility, resources) that condition how humans use them.

Colma formation is the earliest landform with the potential for prehistoric archaeological property in the project area and refers to a sequence of fine marine sediments and aeolian sands and silt deposited throughout the Pleistocene and into the early Holocene. This geologic unit is composed of two components, the older lower component (formed between 120,000 and 80,000 years ago) and the younger upper component (formed between 65,000 and 8,000 years ago). The lower component is considered to have low sensitivity for archaeological resources, while the upper component is considered to have low to moderate sensitivity for archaeological resources. The upper contact of the Colma formation also retains sensitivity for archaeological resources because it would have served as a habitable surface, where exposed, during the Holocene.

Tidal flats formed in the Hub Plan area during a period for which there is documented evidence of human occupation of North America (starting at the Pleistocene/Holocene transition, approximately 12,000 years ago); however, the conditions in which they formed reduce their potential for containing archaeological deposits. For example, although salt marshes and intertidal flats are rich in floral and faunal resources, they are regularly inundated and cannot be used for habitation or resource processing activities that require long periods of time because the ground surface associated with subtidal flats is permanently inundated, human activities would not have occurred directly on the surface. As a result of limited ground surface accessibility for all three landforms (salt marshes, intertidal and subtidal flats), collectively referred to as *tidal flats*, it is anticipated that any evidence of human use of the landscape would be limited to occasional isolated tools and intertidal resource capture facilities (e.g., weirs and traps). Therefore, of the three landforms, only the intertidal flats and salt marshes are anticipated to have moderate sensitivity with respect to prehistoric archaeological resources because of the sparseness of the artifacts; however, the potential for data collection is high. Specifically, intertidal flats occasionally contain isolated prehistoric artifacts that are associated with prehistoric resource collection and processing but very rarely human remains.

Freshwater marshes also date to the Late Pleistocene to Holocene. They form in areas where the permeability of the underlying substrate is less than the rate of water accumulation or where the water table elevation exceeds the elevation of a topographic depression. Marshes act as sediment traps for the surrounding uplands and therefore tend to be landforms with short geologic lifespans. Marshes provide habitat for freshwater wetland vegetation and waterfowl but are intermittently or regularly inundated by water. As a result, these areas tend to be suitable for resource procurement activities rather than habitation or resource processing activities. Therefore, it is anticipated that physical evidence of human use in marshes would be limited to isolated tools associated with resource collection. However, marshes may also contain paleoenvironmental data that, when combined with associated archaeological sites, may address important research questions, as illustrated for the archaeological investigations in support of the 150 Van Ness Avenue Project. The upland areas around marshes would be ideal for habitation and resource processing activities and would have high sensitivity for containing archaeological resources.

Sand dunes date from the late Pleistocene to the Holocene. They form in environments where there is a ready source of sediment that is small enough to be transported by wind, the wind is frequent enough to transport sufficient quantities of sediment, and few obstacles are present to inhibit the erosion and transport of sediments. Individual dunes can be unstable and migrate over time. Although this process can result in both vertical and horizontal movement of archaeological deposits located on unstable dunes, it can also result in the burial and protection of previously exposed archaeological deposits. Dune landscapes were frequently used by prehistoric peoples for habitation, resource collection, and resource processing. Therefore, it is anticipated that dunes have high potential for containing intact archaeological deposits. The most recent type is the anthropogenic landform, dating to sometime after the historic-period (post-1850). This human-induced modification of the landscape often took the form of "fill," which is used to raise the elevation of the ground surface and provide structurally suitable materials for construction. The process of filling can bury the pre-development ground surface, which, when cutting has not removed deposits that retain archaeological potential, can result in the burial of archaeological sites. Depending on the fill material's source of origin, it may contain accumulations of prehistoric, historical, and modern items that have been displaced from the location of their primary deposition. Such items would not be in primary depositional context and, therefore, would not represent intact archaeological deposits. Therefore, anthropogenic landforms are anticipated to have limited prehistoric archaeological sensitivity. However, it is the department's policy that prehistoric midden, regardless of depositional context, may retain enough information to be considered a significant historic resource under CEQA.

ARCHAEOLOGICAL RESOURCES FROM THE HISTORIC PERIOD

This subsection, describing the archaeological resources from the historic period, is based on the information as presented in the ARDTP.[67]

The historic period for the Hub Plan area began with Spain's colonization of California, specifically, the founding of Mission Dolores in San Francisco in 1776. San Francisco's development, which encompasses the 1848 Gold Rush, the 1906 earthquake and fire, industrialization, residential development, commercialization, and automobile-oriented transportation (see historic context section), is reflected in the archaeological record (i.e., the

[67] ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018, pp. 4-1 to 4-11. This document contains sensitive archaeological information and is confidential.

physical things left behind from these cultural changes). Historic-period archaeological resources may include, but are not limited to, artifacts and features associated with four archaeological property types including architectural, infrastructure, landscaping, and refuse.

Previously Recorded Historic Archaeological Sites in the Hub Plan Area and Vicinity

Previously recorded archaeological resources and projects, identified during Northwest Information Center record searches, assert that most of the recent archaeological work in San Francisco has been generated from archaeology field investigations, which were designed to identify and mitigate project impacts primarily through the CEQA process. Thirteen projects have occurred in or directly adjacent to the Hub Plan area. Eight of these either identified or evaluated archaeological resources within the Hub Plan area. Five projects documented the resources in archaeological research design and treatment plans as well as archaeological testing and monitoring plans; two of the resources (described below) were historical archaeological deposits.

1500 Mission Street: A cultural resources investigation was prepared for the 1500 Mission Street Project, located in the Hub Plan area. Eleven core excavations and 17-foot-deep mechanical trenching were conducted at the 1500 Mission Street project site to test for prehistoric materials and deposits in areas of anticipated construction excavations where subsurface sensitivity was identified. Although the cores failed to identify prehistoric deposits, some cores provided samples of marsh and burned redwood/peat deposits, which are eligible for the California register. Archaeological trenching yielded a total of 26 features, 15 of which were eligible for the California register. The results of the 1500 Mission Street Project investigation indicate that the project site has reduced sensitivity in areas where direct construction has occurred. The project vicinity maintains increased sensitivity for historic-period and prehistoric resources, based on the results of the recent archaeological investigations and vertical extents of Holocene-aged deposits that underlie the project vicinity.

Trench 10 Historic-Period Dump: Originally identified at depths ranging from 24 to 42 inches below the ground surface during exploratory backhoe excavations for the Van Ness Avenue Bus Rapid Transit Project, the Trench 10 Historic-period Dump is in the Hub Plan area, at the intersection of South Van Ness Avenue and Mission Street, continuing north toward Van Ness Avenue and Market Street. It consists of an intact historic refuse deposit (i.e., dump), which can be split into three components: predating, contemporaneous, and dating after the 1906 earthquake. The cultural material included broken domestic and personal items, such as whole glass bottles for alcohol, faunal remains, and some structural debris. Analysis of this feature is ongoing.

Potential for Encountering Historic Archaeological Property Types in the Hub Plan Area and Vicinity

Historic research, based on U.S. Coast Survey and Sanborn Fire Insurance Company map analysis, revealed that in the Hub Plan area residential, commercial, and industrial development were the predominant activities between 1853 and 1950. According to the research, some areas in the Hub Plan area have remained active roadways or vacant lots since their construction in the historic period. Because these areas have not been subject to substantive residential or commercial development, they have been interpreted as having low historical archaeological sensitivity. There are also areas that retain moderate to high sensitivity, including areas of residential development, named structures on Sanborn Fire Insurance Company maps, and areas within 75 feet of previously identified historical archaeological resources. These subjects and areas can be defined by property type, thereby breaking down the components of the structures into elements that are recognizable in the historic archaeological record.

Four historic-period archaeological property types have the potential to be present in the Hub Plan area: architectural, infrastructure, landscaping, and refuse. Each historic-period property type is listed in **Table 3.A-4.**

TABLE 3.A-4. HISTORIC-PERIOD ARCHAEOLOGICAL PROPERTY TYPES

Property Type	Features – Characteristics
Architectural	Foundations – Brick alignments, concrete slabs, piers, and pilings
	Builder's Trenches and Walls – Concrete, brick, or wood, in situ or collapsed
	Decking/Planking – Boards, in situ or collapsed
	Floors – Concrete, wood, or tile
Infrastructure	Utility Lines—Alignments of sewer pipes, power lines, water lines, pipes, or trenches or pit/post holes associated with the installation of these types of utilities
	Transportation Routes – Roads, trails, tracks, and vehicular parking or storage areas
Landscaping	Gardens – Alignments of pathways, fencing, planting beds, decorative elements, and planting holes
	Agricultural – Terraces, plow scars, and irrigation
Refuse	Contents of Hollow Filled Features – Pits, privies, or wells
	Sheet Refuse – Refuse accumulated over time
	Dumps – Waste piles or open dumps

REGULATORY FRAMEWORK

The following section summarizes the plans and policies of federal, state, and local agencies that have regulatory control over cultural resources—inclusive of built-environment resources, archaeological resources, and human remains—within the Hub Plan area.

FEDERAL REGULATIONS

Although the Hub Plan, the two individual development projects, and the Hub HSD are not anticipated to require compliance with section 106 of the National Historic Preservation Act, the national register and federal guidelines related to the treatment of cultural resources are relevant for the purposes of determining whether cultural resources, as defined under CEQA, are present and guiding the treatment of such resources. The sections below summarize the relevant federal regulations and guidelines.

NATIONAL HISTORIC PRESERVATION ACT AND NATIONAL REGISTER OF HISTORIC PLACES

Archaeological and architectural resources (buildings and structures) are protected through the National Historic Preservation Act (16 U.S. Code 470f), Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. The National Historic Preservation Act requires project review for effects on historic properties only when projects involve federal funding or permitting or occur on federal land; therefore, it is not applicable to discretionary actions at the municipal level. However, the National Historic Preservation Act establishes the national register, which provides a framework for resource evaluation and informs the process of determining impacts on historical resources under CEQA.

The national register is the nation's official comprehensive inventory of historic resources. Administered by the National Park Service, the national register includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. Typically, a resource that is more than 50 years of age is eligible for listing in the national register if it meets any one of the four eligibility criteria *and* retains sufficient historical integrity. A resource less than 50 years old may be eligible if it can be demonstrated that it is of "exceptional importance" or a contributor to a historic district. National register criteria are defined in *National Register Bulletin Number 15: How to Apply the National Register Criteria for Evaluation*.

A structure, site, building, district, or object would be eligible for listing in the national register if it can be demonstrated that it meets at least one of the following four evaluative criteria:

- **Criterion A (Event):** Properties associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B (Person):** Properties associated with the lives of persons significant in our past;
- **Criterion C (Design/Construction):** Properties that embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant distinguishable entity whose components lack individual distinction; and
- **Criterion D (Information Potential):** Properties that have yielded, or may be likely to yield, information important in prehistory or history.

A resource can be significant to American history, architecture, archaeology, engineering, and/or culture at the national, state, or local level. In addition to meeting at least one of the four criteria, a property or district must retain integrity, meaning that it must have the ability to convey its significance through the retention of seven aspects, or qualities, that, in various combinations, define integrity:

- **Location:** Place where the historic property was constructed;
- **Design:** Combination of elements that create the form, plans, space, structure, and style of the property;
- **Setting:** The physical environment of the historic property, inclusive of the landscape and spatial relationships of the buildings;
- **Materials:** The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form the historic property;
- **Workmanship:** Physical evidence of the crafts of a particular culture or people during any given period in history;
- **Feeling:** The property's expression of the aesthetic or historic sense of a particular period of time; and
- **Association:** Direct link between an important historic event or person and a historic property.

Properties that are listed in the national register, as well as properties that are formally determined to be eligible for listing in the national register, are automatically listed in the California register and, thus, are considered historical resources under CEQA.

SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION AND ILLUSTRATED GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

The secretary's standards and secretary's guidelines provide guidance for reviewing work on historic properties. [68] Developed by the National Park Service for reviewing certified rehabilitation tax credit projects, the secretary's standards have been adopted by local government bodies across the country for reviewing proposed work on historic properties under local preservation ordinances. The secretary's standards provide a useful analytical tool

---

[68] U.S. Department of Interior, National Park Service, Cultural Resources, Preservation Assistance Division, *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings*, 1992. The standards, revised in 1992, were codified as 36 Code of Federal Regulations (CFR) part 68.3 in the July 12, 1995, *Federal Register* (Vol. 60, No. 133). The revision replaces the 1978 and 1983 versions of 36 CFR 68 titled *The Secretary of the Interior's Standards for Historic Preservation Projects.* The 36 CFR 68.3 standards are applied to all grant-in-aid development projects assisted through the National Historic Preservation Fund. Another set of standards, 36 CFR 67.7, focuses on "certified historic structures," as defined by the IRS Code of 1986. The standards in 36 CFR 67.7 are used primarily when property owners are seeking certification for federal tax benefits. The two sets of standards vary slightly, but the differences are primarily technical and nonsubstantive in nature. The guidelines, however, are not codified in the *Federal Register*.

for understanding and describing the potential impacts of changes to historic resources, including new construction inside or adjoining historic districts.

State Regulations

California implements the National Historic Preservation Act through its statewide comprehensive cultural resource preservation programs. The California Office of Historic Preservation, an office of the California DPR, implements policies of the National Historic Preservation Act on a statewide level. The California Office of Historic Preservation also maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the state's jurisdiction.

California Register of Historical Resources

The California register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and indicating which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Public Resources Code section 5024.1(a)). The California register criteria are based on the national register criteria (Public Resources Code section 5024.1(b)). Certain resources are determined by CEQA to be automatically included in the California register, including California properties formally eligible for or listed in the national register. To be eligible for the California register as a historical resource, a resource must be significant at the local, state, and/or federal level under one or more of the following criteria:

- **Criterion 1 (Events):** Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the U.S.;
- **Criterion 2 (Persons):** Resources that are associated with the lives of persons important to local, California, or national history;
- **Criterion 3 (Design/Construction):** Resources that embody the distinctive characteristics of a type, period, region, or method of construction; represent the work of a master; or possess high artistic values; or
- **Criterion 4 (Archaeological/Source of New Information):** Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California, or the nation.

As for the national register, a significant historical resource must possess integrity in addition to meeting the significance criteria in order to be considered eligible for listing in the California register. Consideration of integrity for evaluation of California register eligibility follows the definitions and criteria from National Park Service *National Register Bulletin 15*.

California Environmental Quality Act

CEQA, as codified in Public Resources Code section 21000 et seq. and implemented by the CEQA Guidelines (14 CCR section 15000 et seq.), is the principal statute governing environmental review of projects in California. As stated above, CEQA defines a historical resource as a property listed in, or eligible for listing in, the California register; included in a qualifying local register; or determined by lead agency to be historically significant. In order to be considered a historical resource, a property must generally be at least 50 years old; when acting as CEQA lead agency, the department uses a threshold of 45 years.[69] Section 21084.1 of the Public Resources Code and section 15064.5 of the CEQA Guidelines define a historical resource for purposes of CEQA.

CEQA requires lead agencies to determine if a proposed project would have a significant effect on important historical resources or unique archaeological resources. If a lead agency determines that an archaeological site is a historical resource, the provisions of Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of Public Resources Code section 21083.2 regarding unique archaeological resources. A unique archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets the following criteria:

- Contains information needed to answer important scientific research questions, and that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (Public Resources Code section 21083.2(g)).

The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines section 15064.5(c)(4)). In addition, projects that comply with the secretary's standards benefit from a regulatory presumption under CEQA that they would have a less-than-significant impact on a historical resource (14 CCR 15126.4(b)(1)). Projects that do not comply with the secretary's standards may or may not cause a substantial adverse change in the significance of a historical resource and must be subject to further analysis in order to assess whether they result in material impairment of a historical resource's significance.

---

69 As stated in the California Office of Historic Preservation's Technical Assistance Series #6, a resource that has achieved significance more recently than 50 years can still be determined eligible for California register listing if it can be demonstrated that sufficient time has passed "to obtain a scholarly perspective on the events or individuals associated with the resource."

The Treatment of Human Remains

Under state law, human remains and associated burial items may be significant resources in two ways. They may be significant to descendant communities because of lineage connections or for patrimonial, cultural, lineage, or religious reasons, or they may be important to the scientific community (e.g., prehistorians, epidemiologists, physical anthropologists). The specific interest of some descendant groups in ancestral burials is a matter of law, such as for Native Americans (CEQA Guidelines section 15064.5(d), Public Resources Code section 5097.98). In other cases, the concerns of the associated descendant group regarding the appropriate treatment and disposition of discovered human burials may become known only through outreach. Beliefs concerning appropriate treatment, study, and disposition of human remains and associated burial items may be inconsistent or in conflict between descendant and scientific communities.

With respect to the potential discovery of human remains, section 7050.5 of the California Health and Safety Code states that every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in section 5097.99 of the Public Resources Code. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of section 5097.94 of the Public Resources Code or any person authorized to implement section 5097.98 of the Public Resources Code.

CEQA, and other state regulations concerning Native American human remains, provides the following procedural requirements to assist in avoiding potential adverse effects on human remains within the context of their value to both descendant communities and the scientific community:

a) When an initial study identifies the existence of Native American human remains or probable likelihood that a project would affect Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the Native American Heritage Commission to develop an agreement for the treatment and disposal of the human remains and any associated burial items (CEQA Guidelines section 15064.5(d), Public Resources Code section 5097.98).

b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, the project head foreman and/or project sponsor shall immediately notify the City's Environmental Review Officer and the county coroner. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains were discovered has determined, in accordance with chapter 10 (commencing with section 27460) of part 3 of division 2 of title 3 of the Government Code, that the remains are not subject to the provisions of section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner, and cause of any death and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in section 5097.98 of the Public Resources Code.

c) If the coroner determines that the remains are not subject to his or her authority and recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (California Health and Safety Code section 7050.5).

d) After notification, following the procedures outlined in Public Resources Code section 5097.98, the Native American Heritage Commission notifies the most likely descendant, if possible, who makes recommendations for treatment of the remains. Also, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under California law (Public Resources Code section 5097.99).

Public Resources Code Section 5097.9

Public Resources Code section 5097.9 states that no public agency or private party on public property shall "interfere with the free expression or exercise of Native American religion." The code further states that:

> No such agency or party [shall] cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine … except on a clear and convincing showing that the public interest and necessity so require. County and city lands are exempt from this provision, except for parklands larger than 100 acres.

Local Regulations, Plans, and Policies

San Francisco General Plan

The San Francisco General Plan Urban Design Element, originally adopted in 1986, addresses issues related to historic preservation by providing policies that emphasize preservation of notable landmarks and historic features, remodeling older buildings, and respecting the character of older buildings adjacent to new development.

- Policy 2.4: Preserve notable landmarks and areas of historic, architectural, or aesthetic value and promote the preservation of other buildings and features that provide continuity with past development.
- Policy 2.5: Use care in remodeling of older buildings in order to enhance rather than weaken the original character of such buildings.
- Policy 2.6: Respect the character of older development nearby in the design of new buildings.

The City's commitment to historic preservation is codified in Planning Code section 101.1(b), which establishes eight general plan priority policies. Priority Policy 7 of section 101.1(b) of the planning code addresses the City's desire to preserve landmarks and historic buildings.

- Priority Policy 7: That landmarks and historic buildings be preserved.[70]

The San Francisco General Plan Housing Element also includes a relevant policy that calls for the preservation of landmark buildings and maintaining consistency of historic districts.

- Policy 11.7: Respect San Francisco's historic fabric by preserving landmark buildings and ensuring consistency with historic districts.

Market and Octavia Area Plan

Put into effect in 2007, the Market and Octavia Area Plan was prepared by the department to guide new development and public realm improvements in the area surrounding the intersection of Market Street and Octavia Boulevard in central San Francisco. The Market and Octavia Area Plan area encompasses nearly the entirety of the Hub Plan area; as noted above, the Hub Plan constitutes an amendment to the Market and Octavia Area Plan. The Market and Octavia Area Plan includes Objective 3.2: "Promote the preservation of notable historic landmarks, individual historic buildings, and features that help to provide continuity with the past." Objective 3.2 is supported by several policies that encourage the protection of historical resources within the Market and Octavia Plan area by promoting future survey and designation efforts, encouraging building rehabilitation in conformance with the secretary's standards, and encouraging infill development that is respectful of the character of the surrounding historic context.

San Francisco Historic Preservation Commission and Planning Code, Articles 10 and 11

The San Francisco Historic Preservation Commission is a seven-member body that makes recommendations directly to the board of supervisors regarding the designation of landmark buildings, historic districts, and significant buildings. The commission approves certificates of appropriateness for individual landmarks and landmark districts designated under article 10 and permits to alter for individual properties and conservation districts listed under article 11. The Historic Preservation Commission reviews and comments on CEQA documents for projects that affect historic resources as well as projects that are subject to review under section 106 of the National Historic Preservation Act.

The San Francisco Charter gives the San Francisco Historic Preservation Commission the ability to identify, designate, and protect historic landmarks (including buildings, sites, objects, and districts) from inappropriate alterations. The planning code, in article 10, contains regulations to

---

[70] City and County of San Francisco, San Francisco Planning Code, section 101.1(b), June 23, 2018, *http://library.amlegal.com/nxt/gateway.dll/California/planning/article1generalzoningprovisions?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$anc=JD_102.32*, accessed July 4, 2018.

implement the way the historic preservation commission exercises its authority. Since the adoption of article 10 in 1967, the City has designated 286 landmark sites and 14 historic districts under article 10.[71] Article 11 of the planning code, which was adopted on September 17, 1985, contains similar regulations, and implements the authority the historic preservation commission has under the San Francisco Charter to establish Significant and Contributory Buildings, as well as conservation districts, in the C-3 Downtown Commercial zoning district. Article 11 establishes a register of conservation districts and individual properties in the area. As described under "Built-Environment Resources in the CEQA Study Area" above, any property that has been locally designated as an article 10 landmark; a Category I, II, III, or IV building under article 11; or a contributor to an article 10 or article 11 district is considered a CEQA historical resource. Article 11 Category V buildings are not considered CEQA historical resources on the basis of their article 11 designation.[72]

Section 128 of the planning code allows transferrable development rights from properties designated under article 10 and as a "Significant" or "Contributory" building under article 11 within the C-3 downtown zoning district to eligible transfer lots.

IMPACTS AND MITIGATION MEASURES

This section describes the impact analysis related to cultural resources for the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street. It describes the methods used to determine the program- and project-level impacts and lists the thresholds used to conclude whether an impact would be significant under CEQA. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

Implementation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations but would not require additional CEQA analysis. Because the Hub HSD would be a procedural

---

71 City and County of San Francisco, *Article 10: Preservation of Historical Architectural and Aesthetic Landmarks,* 2019, *http://library.amlegal.com/nxt/gateway.dll/California/planning/article10preservationofhistoricalarchite?f=templates$fn=altmain-nf.htm$q=[field%20folio-destination-name:%27Article%2010%27]$x=Advanced#JD_Article10,* accessed July 2, 2019.

72 San Francisco Planning Department, *San Francisco Preservation Bulletin No. 16: City and County of San Francisco Planning Department CEQA Review Procedures for Historic Resources.* March 2008, *https://sf-planning.org/sites/default/files/FileCenter/Documents/5340-PresBulletin16CEQA.pdf, accessed December 10*, 2018.

change that would be shown as an overlay on zoning maps, no impacts would result from implementation of the HSD beyond those identified for the Hub Plan, and this project component is not discussed further.

Significance Criteria

The Hub Plan and the two individual development projects would be considered to have a significant impact on historical resources if they would result in any of the conditions listed below. As previously noted, tribal cultural resources are addressed in their own section in the initial study (Appendix B to this EIR).

- Cause a substantial adverse change in the significance of a historical resource, as defined in Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code.
- Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Public Resources Code section 21083.2 and CEQA Guidelines section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

Section 15064.5(b)(1) of the CEQA Guidelines defines "substantial adverse change to a historical resource" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired." Material impairment of a historical resource, as defined in CEQA Guidelines section 15064.5(b)(2), occurs when a project "demolishes or materially alters in an adverse manner" those physical characteristics of the resource that express its significance and justify its inclusion in, or eligibility for listing in, the California register or a qualified local register of historical resources or evaluation as historically significant in a qualified local survey.

Approach to Analysis

The following section analyzes potential impacts on historical resources, archaeological resources, and human remains that may be caused by implementation of the Hub Plan and the construction of two individual development projects at 30 Van Ness Avenue and 98 Franklin Street. Program-level analysis is provided for changes in land use controls that would be implemented as a result of the Hub Plan. The following impact evaluation considers the degree of change to cultural resources that could occur as a result of the changes in land use controls proposed by, and subsequent development projects incentivized by, the Hub Plan, although implementation alone would not immediately cause any physical changes to cultural resources. Project-level analysis is provided for the two individual development projects, as well as the streetscape and street network improvements proposed under the Hub Plan, because the manner in which these activities would physically change the environment is known at a sufficient level of detail to support a more detailed analysis of potential significant impacts.

METHODS OF ANALYZING IMPACTS ON HISTORICAL RESOURCES

Impacts of program- and project-level activities are analyzed for built-environment properties within the Hub Plan area that meet the definition of historical resources, as outlined in Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5, and described in the *Environmental Setting*, above. Per CEQA Guidelines section 15064.5(b)(2), the analysis considers the potential for project activities to materially impair the significance of a historical resource by causing direct changes to the physical characteristics of that resource as well as by causing changes in its immediate setting.

Considered at the project level, material impairment to the significance of a historical resource could occur if project activities demolish, destroy, relocate, or alter in an adverse manner the resource in its entirety or its character-defining features. Alteration in an adverse manner could include activities that involve the reuse of a historical resource but introduce changes not in conformance with the secretary's standards. Additionally, new construction within the vicinity of a historical resource could feasibly cause material impairment if the new construction removes or obscures components of the resource's immediate setting that allow it to convey its significance. Considered at the program level, changes to land use controls proposed by the Hub Plan could cause material impairment to the significance of historical resources because land uses and increased height limits may intensify development within the Hub Plan area, which has the potential to result in the demolition of historical resources and/or the substantial alteration of their historic setting. However, the precise uses, heights, and designs adopted by future development projects newly allowed under the Hub Plan remain unknown at this time. Because it cannot be stated definitively whether projects allowed under the Hub Plan would retain historical resources or rehabilitate them in accordance with the secretary's standards, or if projects would degrade the resources' settings, the program-level components are analyzed for their potential to lead to future projects that materially impair the significance of historical resources.

Program- and project-level components are also analyzed for their potential to cause a substantial adverse change to historic districts located within the Hub Plan area. Material impairment to the significance of a historic district can feasibly occur as a result of the demolition or alteration in an adverse manner of district contributors as well as the construction of infill development or public realm improvements within or adjacent to the district boundaries that is incompatible with the physical characteristics that convey the district's significance. If one or more district contributors are demolished or altered in an adverse manner, the district may not automatically experience substantial adverse change. Rather, substantial adverse change to a historic district would occur if it is demonstrated that the program- or project-level components would disrupt the concentration, linkage, or continuity of district contributors that allow the district as a whole to convey its significance and remain discernible as a geographically and/or thematically linked entity.

Streetlights within the Hub Plan area that have the potential for being historic-age resources would be retained and moved to locations near their current locations or salvaged for reinstallation elsewhere in San Francisco. If located within a historic district, such streetlights would be retained and reused elsewhere within the same district. Because the projects under the Hub Plan or the individual development projects would not have the potential to materially impair these features, further analysis of the streetlights is not included below.

METHODS OF ANALYZING IMPACTS ON ARCHAEOLOGICAL RESOURCES

Impacts of program- and project-level activities are analyzed for prehistoric and historic archaeological resources within the Hub Plan area that meet the definition of historical resources, as outlined in Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5, and described in the *Environmental Setting*, above. Per CEQA Guidelines section 15064.5(b)(2), the analysis considers the potential for project activities to materially impair the significance of a historical resource by causing direct changes to the physical characteristics of that resource.

Two approaches to impact analysis were used to assess potential impacts on known and unknown archaeological resources. One multi-component, one historic-period, and two prehistoric archaeological resources have been previously recorded within the Hub Plan area. The analysis of impacts on known resources consisted of comparing the locations of known archaeological resources against proposed program- and project-level construction activities. The analysis of impacts on unknown archaeological resources consisted of comparing areas identified as being archaeologically sensitive, based on the findings of the ARDTP, to proposed program- and project-level construction activities. In both instances, this analysis was used to determine whether potential impacts on archaeological resources are possible.

Sensitivity Analysis of Known Resources

Archaeological resources within the Hub Plan area were identified through a records review and archival research. The locations and depths of the resources were then compared to the locations and depths of proposed project-level construction activities to determine whether project activities are likely to encounter known archaeological resources.

Sensitivity Analysis of Unknown Resources

As discussed in the Archaeological Setting section, integrating landform, geotechnical, and historic map analyses can predict where and at what depth potential resources may be encountered in the Hub Plan area. The final analysis compared this information to proposed project activities to analyze potential impacts.

- *Archival Research:* Historians and archaeologists conducted in-depth research to establish a general and site-specific historical context, identify areas with sensitivity for historical archaeological sites, and identify areas where historical development activities dramatically altered the landscape, reducing the potential for prehistoric and historical archaeological sites. Sources consulted included historical maps, aerials, photographs, and secondary historical writings. Research was conducted at the San Francisco Public Library and the report preparers' library. Online resources consulted include the Sanborn Fire Insurance maps available from the San Francisco Public Library, other historic maps from the David Rumsey Map Collection, historical aerials from Historicaerials.com, and Google Earth historical imagery.

- *Review of Nearby Sites and Archaeological Studies:* On February 6, 2018, a cultural resources records review was performed at the Northwest Information Center at Sonoma State University in Rohnert Park. The purpose of the review was to identify any supplemental archaeological resources or research from within or directly adjacent to the Hub Plan area that were not included in the records provided by the department. The findings from this review were combined with the information provided in the City records and represent a complete list of available archaeological studies and resources as of the writing of this document.
- *Native American Outreach:* The Native American Heritage Commission was contacted on October 4, 2018, to identify, using the Sacred Land File, any areas of concern within the Hub Plan area or Native American properties. Correspondence associated with Native American outreach conducted as part of the ARDTP can be found in Appendix A of the ARDTP. On December 11, 2018, Andy Galvan of the Ohlone Indian tribe indicated that he would like to be consulted on the project. A summary of this consultation is included in the tribal cultural resources section of the initial study (Appendix B). In addition, correspondence between the department and local Native American representatives regarding tribal cultural resources is included in the tribal cultural resources section in the initial study.
- *Geoarchaeological Analysis:* A field geoarchaeological study was performed to accurately define archaeological sensitivity in the Hub Plan area. Using the analytical framework provided in the *Prehistoric Archaeological Investigations in the Project and Vicinity* section, the study consisted of excavating and analyzing 15 geoprobe borings in strategic locations within the Hub Plan area. Borings were excavated at a depth of 40 feet below ground surface; the sediment samples collected from the boring effort were analyzed in a laboratory to determine the depositional context and archaeological sensitivity.
- *Historic Map Analysis:* Urban historical archaeological sensitivity is based on knowledge of the spatial organization of historic sites and the types of activities that result in the deposition of objects that create archaeological deposits. Archival and historic map analyses were the primary methods used to gauge effects on the sensitivity of the Hub Plan area. U.S. Coast Surveys and Sanborn Fire Insurance

Company maps revealed that early residential, commercial, and industrial development was the predominant activity in the Hub Plan area from the mid-19th to the mid-20th centuries.[73]

Methods of Analyzing Impacts on Human Remains or Unassociated Funerary Objects

The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws, including immediate notification of the Office of the Chief Medical Examiner of the city and, in the event of the medical examiner's determination that the human remains are Native American remains, notification of the California Native American Heritage Commission, which shall appoint a most likely descendant (Public Resources Code section 5097.98). The environmental review officer shall also be immediately notified upon discovery of human remains. The archaeological consultant, project sponsor, Environmental Review Officer, and most likely descendant make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code section 5097.98 requirement that descendants make recommendations or preferences for treatment within 48 hours of being granted access to the site. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations compels the project sponsor and the environmental review officer to accept recommendations of a most likely descendant. The archaeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archaeological consultant and the environmental review officer. If no agreement is reached, state regulations shall be followed including the reburial of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98).

---

73 ICF, *Archaeological Research Design and Treatment Plan for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD), San Francisco, California*, prepared for the San Francisco Planning Department, December 2018, p. 6-33. This document contains sensitive archaeological information and is confidential.

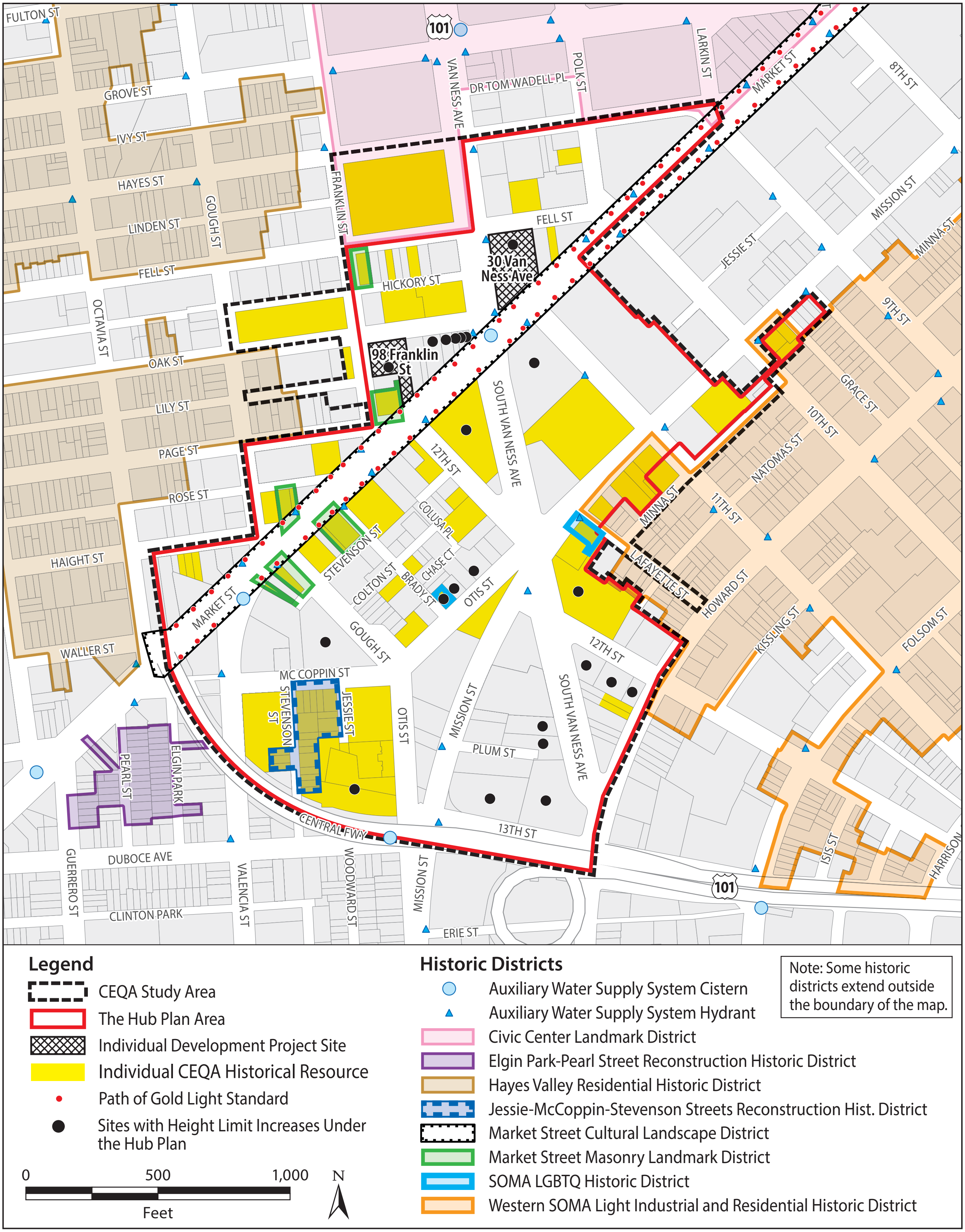
IMPACT EVALUATION

Impact CUL-1: The Hub Plan could cause a substantial adverse change in the significance of individual built-environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code. (Significant and Unavoidable with Mitigation)

The following analysis discusses potential impacts that could be caused by components of the Hub Plan, which include subsequent development projects (with the exception of the individual projects at 30 Van Ness Avenue and 98 Franklin Street, which are analyzed at the project level under Impact CUL-2, below) occurring as a result of land use control changes and incentives as well as streetscape and street network improvements. Mitigation measures are presented to reduce or avoid the identified impacts of the land use control changes and streetscape and street network improvements.

The objectives of the Hub Plan include encouraging new development, which would be accomplished through implementing changes in zoning controls across portions of the Hub Plan area in favor of allowed land uses and urban forms that promote the construction of new housing. To accomplish this objective, the Hub Plan would introduce changes in existing land controls and zoning to provide greater flexibility in allowed uses in the Hub Plan area and modify height and bulk limits on 18 specific sites. See **Table 2-1**, p. 2-24, in Chapter 2, Project Description, for a full list of existing and proposed height limits under the Hub Plan. **Figure 3.A-3** shows these 18 sites in relation to the built-environment resources and historic districts.

In total, it is anticipated that implementation of the Hub Plan would result in increased development throughout the Hub Plan area, particularly on the 18 sites where a height increase is proposed. Although implementation of the Hub Plan would not immediately change the significance of a historical resource, for the purposes of the analysis, a foreseeable result of zoning control changes proposed under the Hub Plan could be demolition of built historic resources (i.e., individually listed/eligible-for-listing resources or historic district contributors) or their alteration in an adverse manner. Specific details are not yet known regarding individual development projects that may be proposed within the Hub Plan area following plan implementation or changes in allowable uses and height and bulk districts (with the exception of the individual projects at 30 Van Ness Avenue and 98 Franklin Street, which are analyzed at the project-level under Impact CUL-2, below). The Hub Plan does not require new development projects occurring on sites with built-environment resources to rehabilitate those resources in conformance with the secretary's standards. Therefore, implementation of the Hub Plan may result in demolition of built-environment resources or alteration in an adverse manner throughout the Hub Plan area.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.A-3
The Hub Plan Built Environment Resources and Height Increases

The streetscape and street network improvements that are proposed by the Hub Plan would include the following types of activities: widening sidewalks; introducing bicycle lanes, protected bikeways, and vehicular traffic-calming features, such as bulb-outs; upgrading streetlights and adding new signalized crossings; reconfiguring vehicular traffic lanes and street-side vehicular parking spaces; inserting new planted medians; and introducing new green spaces and street trees. The Hub Plan has developed design recommendations for several major streets within the Hub Plan area. Selected alleys would also be improved to enhance the experience for people walking. Streetscape and street network improvements would have the potential to materially impair a built-environment resource in instances when such projects demolish or alter in an adverse manner the character-defining features of a resource or substantially change the immediate surroundings to the extent that the integrity is degraded and can no longer convey its significance.

IMPACTS ON INDIVIDUAL BUILT-ENVIRONMENT RESOURCES

Built-environment resources that are individually listed in, or determined eligible for listing in, historic registers are located on sites that are proposed for changes in allowable land uses or changes in maximum height limits. Changes in allowable land uses may result in reuse or redevelopment of sites within the Hub Plan area, with the potential to demolish or substantially alter historical resources. In addition, it is likely that future development would occur specifically within the 18 sites where height and bulk limits would increase as a result of the Hub Plan. Three of these sites contain listed or eligible historical resources and are considered particularly likely sites for future development due to the proposed increase in height and bulk limits.[74] These include:

- 170 Otis Street, an existing eight-story building where the maximum allowable height would be increased from 85 to 150 feet;
- 10 South Van Ness Avenue, an existing one-story building where the maximum allowable height would be increased from 400 to 590 feet over a portion of the site; and
- 99 South Van Ness Avenue, an existing two-story building where the maximum allowable height would be increased from 120 to 250 feet.

Subsequent development resulting from the proposed increase in height and bulk limits under the Hub Plan could also be constructed within the immediate vicinity of (i.e., within one parcel from) historical built-environment resources. In such cases, it is possible that the new

---

[74] One additional site within the Hub Plan area that is proposed for a height increase, 14–18 Otis Street, contained a historical resource at the time of the NOP for the current EIR. The historical resource underwent separate environmental review and was subsequently approved for demolition under Case No. 2015-010013ENV prior to the publication of this EIR. 14–18 Otis Street is therefore not considered a historical resource for the purposes of this EIR.

construction would be of a scale that is incompatible with significant characteristics of the adjacent historical resource, or would separate a resource from aspects of its immediate setting that allow it to express its significance. Individual built-environment resources that are located adjacent to the one or more of the 18 sites that could experience height increases include 1618–1624 Howard Street, 1601–1605 Market Street, 1500 Mission Street, 1600 Mission Street, 1563 Mission Street, 25 Van Ness Avenue, 42–50 12th Street, and 56–70 12th Street. In these instances, new construction occurring under the Hub Plan may be substantially taller than the adjacent built-environment resources. However, each of these individual built-environment resources is significant for its architectural characteristics or as an example of a particular building typology and development pattern (e.g., an early 20th-century automobile garage) that would remain discernible even within a changed setting featuring substantially taller buildings in the vicinity. Furthermore, none of these resources has significance that is directly tied to nearby buildings within its setting that may be demolished and redeveloped as a result of subsequent development under the Hub Plan. Therefore, subsequent development allowed under the Hub Plan would not change the setting of any adjacent individual built-environment resource to the extent that its significance would be materially impaired. The potential for new construction to cause vibration that would materially impair the significance of adjacent built-environment resources is discussed under Impact CUL-3, below.

Streetscape and street network improvements proposed under the Hub Plan are also analyzed for potential impacts on individual built-environment resources. These changes would occur within the public right-of-way. Only one individually designated historical resource within the Hub Plan area, the Path of Gold light standards, is located within the public right-of-way. This resource lines both sides of Market Street between The Embarcadero and Castro Street and extends through the Hub Plan area. However, the Path of Gold light standards do not overlap any locations within the Hub Plan area where streetscape and street network improvements would occur. Additionally, the majority of the individual built-environment resources in the Hub Plan area that are adjacent to the streets and alleys where streetscape and street network improvements are proposed—including Gough Street, Otis Street, South Van Ness Avenue, Oak Street, and 12th Street—do not have character-defining features that extend into the public right-of-way or convey the resource's significance through a close physical or aesthetic relationship to the specific materials and design of the surrounding streetscape. 170 Otis Street features a character-defining pedestrian plaza that has brick paving extending across the public sidewalk to Otis Street. However, the improvements proposed at Otis Street adjacent to this resource involve the introduction of a southbound transit lane and would not require the removal of the red brick paving, and would not disrupt circulation paths into the character-defining plaza. As a result, the proposed streetscape and street network work is not anticipated to involve the demolition or substantial adverse change in the significance of an individual built-environment resource.

Regarding potential impacts on a built-environment resource's setting, streetscape and street network improvements have a low likelihood of causing a substantial adverse change in the significance of any individual built-environment resource that lies adjacent to the proposed area of work. Generally speaking, the public street and sidewalk environment forms the immediate physical context for historical resources. In some instances, it could contain historic elements that strongly evoke its setting during its period of significance. In the majority of cases, however, the streets and sidewalks within a resource's setting have experienced some degree of change. The circulation paths, surface materials, vegetation, and small-scale features that contribute to the character of a streetscape are components of the public realm and regularly updated. The types of streetscape and street network improvement activities proposed under the Hub Plan, which include changes to street configuration, paving materials, sidewalk widths, street trees, furnishings, and lighting, represent a continuation of the streetscape and street network improvement campaigns that have been implemented within the Hub Plan area since the 19th century. As such, streetscape and street network improvements proposed by the Hub Plan would not change the setting of individual built-environment resources to the extent that the significance of those resources would be materially impaired.

Through development incentives, implementation of the Hub Plan would have the potential to result in demolition or alteration in an adverse manner of historical resources. As a result, subsequent development projects under the Hub Plan could lead to material impairment of the significance of those resources and would therefore result in a ***significant*** impact on individual built-environment resources.

Mitigation Measures

M-CUL-1a: ***Avoid or Minimize Effects on Identified Built Environment Resources.*** This mitigation measure is required in recognition of Objective 3.2 of the Market and Octavia Area Plan, to which the Hub Plan is an amendment. Objective 3.2 states that the Market and Octavia Area Plan shall "[p]romote the preservation of notable historic landmarks, individual historic buildings, and features that help to provide continuity with the past." Policy 3.2.2 of the Market and Octavia Plan states that the plan shall "encourage rehabilitation and adaptive reuse of historic buildings and resources." In order to meet Objective 3.2 and Policy 3.2.2, the project sponsor of a subsequent development project in the Hub Plan area that occurs on the site of a built-environment historic resource or contributor to a historic district shall seek feasible means for avoiding significant adverse effects on historic architectural resources, with judgment of the significance of the impact to be based on the Secretary of the Interior's Standards for Rehabilitation. If a project that conforms to the Secretary of the Interior's Standards for Rehabilitation is not feasible, the project sponsor shall a.) demonstrate that infeasibility to the San Francisco Planning Department's preservation staff, and b.) consult with the San Francisco Planning Department's preservation and urban design staff to determine if effects on built-environment resources should be minimized by retaining a portion of the existing building and incorporating it into the project, with the understanding that such minimization would still result in a significant adverse impact on historical resources. If retention of a portion of the existing building is not feasible, the project sponsor shall demonstrate that infeasibility to the San Francisco Planning Department's preservation staff. California Environmental Quality Act Guidelines section 15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." For the purposes of this mitigation measure, economic factors will not be considered. The applicability of each remaining factor would vary from project to project and be determined by staff members on a case-by-case basis.

Should a project that conforms to the secretary's standards be determined to be infeasible, the following additional measures shall be applicable, based on the specific circumstances of the project in question.

M-CUL-1b: ***Prepare and Submit Historical Documentation of Built Environment Resources.*** Where avoidance is not feasible, as described in Mitigation Measure M-CUL-1a, the project sponsor of a subsequent development project in the Hub Plan area shall undertake historical documentation. The project sponsor shall retain a professional who meets the Secretary of the Interior's Qualification Standards for Architectural Historian or Historian (36 Code of Federal Regulations part 61) and a photographer with demonstrated experience in Historic American Buildings Survey photography to prepare written and photographic documentation for the affected built-environment resources. The Historic American Buildings Survey documentation package for each affected built-environment resource shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to the issuance of any demolition, site, or construction permit for the project.

The documentation shall consist of the following:

- *Historic American Buildings Survey–level Photographs*: Historic American Buildings Survey standard large-format photography shall be used to document the built-environment resources and surrounding context. The scope of the photographs shall be reviewed and approved by the San Francisco Planning Department's preservation staff for concurrence, and all photography shall be conducted according to the current National Park Service Historic American Buildings Survey standards. The photograph set shall include distant/elevated views to capture the extent and context of the resource.

- All views shall be referenced on a key map of the resource, including a photograph number with an arrow to indicate the direction of the view.
- The draft photograph contact sheets and key map shall be provided to the San Francisco Planning Department's preservation staff for review to determine the final number and views for inclusion in the final dataset.
- Historic photographs identified in previous studies shall also be collected, scanned as high-resolution digital files, and reproduced in the dataset.

- *Written Historic American Buildings Survey Narrative Report*: A written historical narrative, using the outline format, shall be prepared in accordance with the Historic American Buildings Survey Historical Report Guidelines.
- *Measured Drawings*: A set of measured drawings shall be prepared to document the overall design and character-defining features of the affected built-environment resource. Original design drawings of the resource, if available, shall be digitized and incorporated into the measured drawings set. The San Francisco Planning Department's preservation staff shall assist the consultant in determining the appropriate level of measured drawings.
- *Print-on-Demand Booklet*: Following preparation of the Historic American Buildings Survey photography, narrative report, and drawings, a print-on-demand softcover book shall be produced for the resource that compiles the documentation and historical photographs. The print-on-demand book shall be made available to the public for distribution.

Format of Final Dataset:

- The project sponsor shall contact the History Room of the San Francisco Public Library, San Francisco Planning Department, Northwest Information Center, and California Historical Society to inquire as to whether the research repositories would like to receive a hard or digital copy of the final dataset. Labeled hard copies and/or digital copies of the final book, containing the photograph sets, narrative report, and measured drawings, shall be provided to these repositories in their preferred format.
- The project sponsor shall prepare documentation for review and approval by the San Francisco Planning Department's preservation staff, along with the final Historic American Buildings Survey dataset, that outlines the outreach, response, and actions taken with regard to the repositories listed above. The documentation shall also include any research conducted to identify additional interested groups and the results of that outreach. The project sponsor shall make digital copies of the final dataset, which shall be made available to additional interested organizations, if requested.

This mitigation measure would create a collection of preservation materials that would be available to the public and inform future research. In this way, documentation of the affected properties and presentation of the findings to the community could reduce the impact on historical resources. Although implementation of this mitigation measure may reduce impacts on historical resources, it would not reduce the impact to a less-than-significant level because only avoidance of substantial adverse changes would reduce impacts to less-than-significant levels.

M-CUL-1c: ***Develop and Implement an Interpretive Program for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.*** For projects that would demolish or materially alter a historical resource or contributor to a historic district, the project sponsor shall work with the San Francisco Planning Department's preservation staff or other qualified professionals to institute an interpretive program onsite that references the property's history and the contribution of the historical resource to the broader neighborhood or historic district. The interpretive program would include the creation of historical exhibits, incorporating a permanent display featuring historic photos of the affected resource and a description of its historical significance, in a publicly accessible location on the project site. This may also include a website. The contents of the interpretative program shall be determined by the San Francisco Planning Department's preservation staff. Development of the interpretive displays shall be overseen by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations part 61). An outline of the format and the location and content of the interpretive displays shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to issuance of a demolition permit or site permit. The format, location, content, specifications, and maintenance of the interpretive displays must be finalized prior to issuance of any building permits for the project.

Although implementation of this mitigation measure may reduce impacts on historical resources, it is not expected to reduce impacts to less-than-significant levels because only avoidance of substantial adverse changes to historical resources would reduce impacts to less-than-significant levels.

M-CUL-1d: ***Video Recordation for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.*** For projects that would demolish or materially alter a historical resource or contributor to a historic district, the project sponsor shall work with the San Francisco Planning Department's preservation staff or other qualified professionals to undertake video documentation of the affected historical resource and its setting. The documentation shall be conducted by a professional videographer, preferably one with experience recording architectural resources, prior to the commencement of any demolition or project activities at the project site. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate), as set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations part 61). The documentation shall include as much information as possible, using visuals in combination with narration, about the materials, construction methods, current condition, historic use, and significance and historic context of the historical resource.

Digital copies of the video documentation shall be submitted to the San Francisco Planning Department; archival copies of the video documentation shall be submitted to repositories including, but not limited to, the San Francisco Public Library, Northwest Information Center, and California Historical Society. The video documentation shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to issuance of a demolition, site, or building permit for the project.

Implementation of this mitigation measure would assist in reducing project-specific impacts but would not reduce impacts to a less-than-significant level because only avoidance of substantial adverse changes to historical resources would reduce impacts to less-than-significant levels.

M-CUL-1e: ***Architectural Salvage for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.*** For projects that would demolish or materially alter a historical resource or contributor to a historic district, the project sponsor shall seek feasible means for salvaging the building's character-defining architectural features and incorporating them into either the design of the new project proposed at the site or the interpretive program that would be developed under M-CUL-1c. The project sponsor shall work closely with the San Francisco Planning Department preservation and urban design staff to determine which elements should be salvaged. In the event that reuse of salvaged elements in either the design of a new building or in an interpretive program proves infeasible or otherwise undesirable, as determined by the San Francisco Planning Department preservation staff, the project sponsor may, at the direction of the San Francisco Planning Department preservation staff, be required to attempt to donate the elements to an appropriate historical or arts organization. A detailed salvage plan shall be reviewed and approved by the San Francisco Planning Department's preservation staff prior to the issuance of any demolition, site, or construction permit for the project.

Implementation of this mitigation measure would assist in reducing project-specific impacts but would not reduce impacts to a less-than-significant level because only avoidance of substantial adverse changes to historical resources would reduce impacts to less-than-significant levels.

Significance after Mitigation

Mitigation Measure M-CUL-1a would be required to establish a review process by which subsequent development projects that affect previously identified historical resources would be assessed for their level of impact on the historical resources. If the avoidance measures are determined not to be feasible, subsequent measures (i.e., Mitigation Measures M-CUL-1b through M-CUL-1e) would be required in order to document and interpret for the public the significance of the affected resource and reuse the character-defining historic fabric of the resource in new construction or historic interpretation to the extent deemed feasible. The mitigation would partially compensate for impacts associated with development under the Hub Plan through comprehensive documentation and memorialization of the resource. However, these measures would not be enough to avoid, rectify, reduce, or compensate for the loss of built-environment resources. Because demolition of built-environment resources or alteration in an adverse manner could still occur, the impact would remain ***significant and unavoidable*** after the application of mitigation.

IMPACTS ON HISTORIC DISTRICTS

New development and changes to existing buildings may occur in the Hub Plan area as a result of changes in zoning and height and bulk districts, development incentives, and streetscape and street network improvements. Such changes may occur within or adjacent to historic districts within the Hub Plan area and have the potential to disrupt the concentration, linkage, or continuity that characterizes historic districts and allows them to convey their significance. Adjacent new construction also has the potential to degrade a district’s historic setting. A historic district may remain eligible for historic register listing even if one or even several of its contributors are demolished or substantially altered or if new construction occurs within the district but does not replace a contributing property. The assessment of potential impacts must take into consideration the specific characteristics of the district that qualify it for historic register listing in order to determine how changes to one or several district contributors, or a non-contributing property within the boundaries of the district, may have an impact on the significance of the district as a whole.

Several sites within the CEQA study area may experience significant height and bulk changes within or adjacent to historic districts. Therefore, there is greater potential for substantial adverse changes to the physical characteristics or historic settings of these districts.

Additionally, the Hub Plan’s proposed streetscape and street network improvements would occur adjacent to, or extend into, identified historic districts in the CEQA study area. The Hub Plan area contains several historic districts that are significant as concentrations of aesthetically and/or thematically linked buildings. Similar to the analysis presented above for individual built historical resources, the proposed streetscape and street network improvements represent a limited amount of work, thereby maintaining the functional characteristics of the public realm as a shared and active urban space within these districts. Changes to the precise design and configuration of vehicular traffic lanes, sidewalks, street trees, and infrastructural features, such as streetlights, typically would not impede a historic district's ability to convey the sense of concentration, linkage, or continuity that characterizes it as a collection of associated buildings because these changes would be similar to past changes in the public realm and would continue the ongoing process of streetscape and street network improvement that has occurred since the resources' identified periods of significance. The Hub Plan area also contains historic districts whose character-defining features are primarily located within the public right-of-way. For each of these districts, physical changes to the streetscape implemented as part of the Hub Plan have a greater potential of materially impairing the significance of the district.

The following analysis describes the Hub Plan's potential impacts on historic districts. The impact discussion for each district begins with an analysis of height and bulk district changes, and then subsequently discusses streetscape and street network improvements.

Civic Center Landmark District

The Hub Plan would not physically alter any significant characteristics of the Civic Center Landmark District. Height and bulk changes occurring under the Hub Plan would, at nearest, allow development at the intersection of Market Street and Van Ness Avenue that is anticipated to exceed the height of buildings currently located at this intersection. The resulting buildings constructed on the 30 Van Ness Avenue, 1500–1540 Market Street, 1 South Van Ness Avenue, and 10 South Van Ness Avenue sites may rise to heights of between 450 feet and 650 feet, whereas the buildings currently located within these four sites are between 40 and 157 feet tall. (The potential impacts of the 30 Van Ness Avenue Project are discussed separately below under Impact CUL-2.) The considerably taller development that would be allowed at the Market Street-Van Ness Avenue intersection under the Hub Plan would be located between one and two blocks south of the southern boundary of the Civic Center Landmark District, which is centered around the approximately 300-foot-tall City Hall, the district's primary visual anchor. Although the Hub Plan may introduce new development in the general vicinity of the Civic Center Landmark District that is taller than City Hall, it would be separated from City Hall by at least one block, which would be a sufficient distance so as not to directly compete with the primacy of City Hall within the context of the surrounding Beaux-Arts Civic Center Landmark District. Subsequent development occurring under the Hub Plan would not disrupt any significant spatial or visual relationships within the Civic Center Landmark District that convey significance and would not block the viewsheds of City Hall that are intrinsically linked to the district's historic significance, including along the Fulton Street axis.

No streetscape or street network improvements are proposed within or adjacent to the Civic Center Landmark District under the Hub Plan. Therefore, the impact of the Hub Plan on the Civic Center Landmark district would be ***less than significant***.

Hayes Valley Residential Historic District

The Hayes Valley Residential Historic District encompasses a large area of the Hayes Valley neighborhood and overlaps the CEQA study area at the district's eastern end, where Lily Street extends into the district boundary. The Hayes Valley Residential Historic District lies entirely outside of the Hub Plan area, and no parcel within the district is on a site that would experience a change in the height and bulk district or allowable land use.

Streetscape and street network improvements occurring at Lily Street would extend one half-block into the eastern portion of the Hayes Valley Residential Historic District. These activities are analyzed as part of the 98 Franklin Street Project, below.

Therefore, the impact of the Hub Plan on the Hayes Valley Residential Historic District would be ***less than significant***.

Jessie-McCoppin-Stevenson Streets Reconstruction Historic District

The Jessie-McCoppin-Stevenson Streets Reconstruction Historic District contains small-scale, two- or three-story residential buildings that date to the immediate post-1906 earthquake period. The district comprises 15 contributing buildings; however none of the district contributors are on sites that would experience a change in height and bulk zoning. However, the district lies adjacent to two such sites, 33 Gough Street and 170 Otis Street. If these two sites were to be redeveloped to the proposed height limits (250 feet at 33 Gough Street and 150 feet at 170 Otis Street), the setting of the district would include development that would be of a much larger scale than the modest two- and three-story residences that contribute to the district; however, the district's essential internal characteristics, as a concentration of Edwardian-era post-earthquake residential buildings, would not be altered. However, the entirety of the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District would experience a change in allowable land use as a result of the Hub Plan. This change may result in reuse or redevelopment of sites throughout the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, with the potential to demolish or substantially alter contributors to the district.

Streetscape and street network improvements under the Hub Plan include alley work at Stevenson and Jessie streets, which would extend into the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District. Activities proposed at Jessie and Stevenson streets would generally be limited to the provision of new trees, bollards, pedestrian lighting, one bulb-out, seating, and other street furnishings within and adjacent to the district. The existing paving materials, street lighting, sidewalk configuration, and vegetation do not date to the district's period of significance and do not contribute directly to its historic setting. As a result, the alley improvements proposed under the Hub Plan would represent a limited change to the characteristics and setting of the district and would not remove or obscure any physical features that express the district's identity as a coherent, low-rise residential neighborhood that developed following the 1906 earthquake. This change would furthermore represent a continuation of streetscape improvements that have taken place within the district since its period of significance.

Because demolition or substantial alteration of all district contributors may occur as a result of the Hub Plan, the Hub Plan has the potential to materially impair the significance of the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District. Therefore, the impact of the Hub Plan on the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District would be ***significant***.

Market Street Cultural Landscape District

Sites adjacent to the Van Ness Avenue/Market Street intersection, an area where height limits would increase under the Hub Plan, are not within the boundary of the Market Street Cultural Landscape District. Subsequent development occurring under the Hub Plan would not alter any of the district's contributing cultural landscape features located within the district boundaries (including circulation paths, small-scale features, and overall spatial organization of the Market Street corridor). However, the sites where allowable land uses and heights would change contribute to the character of the district insofar as the buildings that line Market Street adjacent to the Market Street Cultural Landscape District form streetwalls that frame the Market Street corridor and assist in contextualizing Market Street's significance as San Francisco's main circulation artery and facilitator of civic engagement, including its role as a significant venue for civic engagement in San Francisco. Adjacent buildings spatially define Market Street as a significant transportation and procession space in downtown San Francisco. Development that could occur with implementation of the Hub Plan specifically would include sites at the prominent intersection of Market Street and Van Ness Avenue (e.g., 30 Van Ness Avenue, 1 South Van Ness Avenue, 10 South Van Ness Avenue, and 1500–1540 Market Street). (The potential impacts of the 30 Van Ness Avenue Project are discussed separately below under Impact CUL-2.) Although anticipated to be taller than the buildings currently located at this intersection, subsequent development that would occur within these sites would reinforce the overall pattern of buildings that frame Market Street and contextualize its importance as a circulation route and space for public engagement. No other character-defining features of the Market Street Cultural Landscape District would be altered through implementation of the Hub Plan.

Regarding streetscape and street network improvements under the Hub Plan, the boundaries of the Market Street Cultural Landscape District are limited to the Market Street roadway and several adjacent plazas for people walking and landscape features within the public right-of-way. The Hub Plan does not propose changes to the broader Market Street streetscape or street network.

As a result, the Hub Plan would not lead to material impairment of the significance of the Market Street Cultural Landscape District. The impact of the Hub Plan on the Market Street Cultural Landscape District would be ***less than significant***.

Market Street Masonry Landmark District

Similar to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District, the Market Street Masonry Landmark District is relatively small, with eight contributing buildings, and entirely contained within the Hub Plan area. None of the contributors to the district are located on a site where height and bulk zoning would change. Although most of the remaining contributors to the Market Street Masonry Landmark District are on sites where the allowable land use would change, it is not anticipated that any would be demolished as a result of the Hub Plan. Because the Market Street Masonry Landmark District is locally designated under article 10, the review process for the certificate of appropriateness would require any district contributor undergoing change in the future to be treated in accordance with the Secretary of the Interior's Standards for Rehabilitation. Compliance with these standards would ensure the resource would retain its eligibility. In addition, three of the contributors to the district—the Edward McRoskey Mattress Factory Company at 65 Gough Street, the Miramar Apartments at 20 Franklin Street/1580–1598 Market Street, and Hotel Fallon at 1693–1695 Market Street are adjacent to sites where the height and bulk district would change. The site adjacent to the Miramar Apartments is 98 Franklin Street; the 98 Franklin Street Project is analyzed at the project level in Impact CUL-2. Neither of the two remaining adjacent sites would remove the district contributors' architectural style linkages or undermine the Market Street Masonry Landmark District's broader commercial district setting, which conveys its historical and architectural significance. For these reasons, no contributors to the Market Street Masonry Landmark District would be demolished or substantially altered as a result of the Hub Plan.

Regarding streetscape and street network improvements under the Hub Plan, alley work is proposed at Stevenson and Rose streets, which occur adjacent to the rear of three contributors to the Market Street Masonry Landmark District. By nature, contributing resources of discontiguous districts are geographically dispersed, and the spaces between district contributors, including non-contributing properties as well as the public realm, contribute negligibly to the significant linkages that characterize these districts. Alley work would introduce new raised crosswalks and intersections, paving materials, trees, bollards, and lighting that would not alter the architectural characteristics that link the contributors of the Market Street Masonry Landmark District. Therefore, the Hub Plan would not materially impair the significance of the Market Street Masonry Landmark District. The impact of the Hub Plan on the Market Street Masonry Landmark District would be ***less than significant***.

San Francisco Auxiliary Water Supply System

The AWSS extends into the Hub Plan area and is composed primarily of infrastructural features in the public realm and below grade. It does not occupy any sites that would experience land use changes as a result of the Hub Plan. Land use changes under the Hub Plan would not demolish or substantially alter any characteristics of the AWSS.

Contributing features of this district, however, exist within the Hub Plan area's streetscape and street network. The AWSS high-pressure fire hydrants, the most ubiquitous features belonging to the system, are found within the Hub Plan area along Market Street, Van Ness Avenue, and Mission Street, and are connected to the below-grade AWSS distribution main. In addition, a sub-surface AWSS cistern is located within the Duboce Avenue right-of-way, near its intersection with Mission Street along the southern boundary of the Hub Plan area. The AWSS cistern in Duboce Avenue is located where new bikeways are proposed under the Hub Plan. It does not appear that the AWSS cistern at this location would be destroyed or altered in an adverse manner as a result of streetscape and street network improvement activities.

AWSS hydrants are found in several locations where streetscape and street network improvements are proposed as part of the Hub Plan, namely at the intersection of South Van Ness Avenue and Mission Street and at the intersection of Lafayette Street and Mission Street. It is not currently known how the AWSS hydrants would be treated at these locations with implementation of the streetscape and street network improvements proposed in the Hub Plan. It remains a possibility that the hydrants would be moved to new locations, which would also require some changes in the locations of branch pipes within the distribution main. Furthermore, San Francisco Public Works (public works) has developed contract specifications related to the protection of existing water and AWSS facilities, which require preparation of a work plan and drawings detailing existing conditions, protection, and proposed work, as well as close conformance to contract specifications, to protect and provide uninterrupted service from these facilities. At the current stage of project development for streetscape and street network improvements under the Hub Plan, however, to what extent the project would require the use of public works AWSS contract specifications remains unknown. Although the sub-surface pipes are character-defining features of the AWSS, their most important contribution to the significance of the resource is their continuing functionality supplying high-pressure water to aboveground features.

In summary, because relocation of AWSS hydrants has the potential to materially impair the significance of the AWSS, the impact of the Hub Plan on the AWSS would be ***significant***.

SoMa LGBTQ Historic District

The SoMa LGBTQ Historic District includes one contributing property, as identified in the 2017 *280–282 Seventh Street Historic Resource Evaluation*, on a site, 50 Otis Street, that could experience changes under the Hub Plan to allowable land uses as well as the height and bulk district. This contributing property, the Women's Press Project, is a two-story building at 95 Brady Street.[75] Under the Hub Plan, the height limit on the site that includes this building would increase from 50 to 65 feet. This height increase could result in either a change to the existing building, or the complete demolition of the building. One other contributor to the SoMa LGBTQ Historic District, 1551–1559 Mission Street, is also in the Hub Plan area but is not located on or adjacent to a site proposed for height and bulk increase. However, even with demolition or substantial alteration of the Women's Press Project and 1551–1559 Mission Street as a result of the Hub Plan, the SoMa LGBTQ Historic District would not experience material impairment with respect to its significance.

Based on the current documentation of the district's significance and character-defining features, the district would still contain more than 100 contributors, even if two contributors were demolished or altered substantially. Furthermore, both contributors to the SoMa LGBTQ Historic District within the Hub Plan area are near the western extent of this discontiguous district such that the potential loss of the Women's Press Project and 1551–1559 Mission Street would not hinder the SoMa LGBTQ Historic District's ability to convey its character as a dispersed collection of cultural and commercial establishments that formed an important enclave for LGBTQ communities during the second half of the 20th century.

Changes in the streetscape and street network under the Hub Plan would occur on Otis and Lafayette streets, which run adjacent to two contributing properties belonging the SoMa LGBTQ Historic District. Similar to the Market Street Masonry Landmark District, the SoMa LGBTQ Historic District is discontiguous, and the public realm does not have primary importance in conveying the significant thematic linkages that characterize the district, which are the contributors' historic role as social and commercial establishments serving LGBTQ communities.

As a result, the Hub Plan would not lead to a substantial adverse change in the significance of the SoMa LGBTQ Historic District. The impact of the Hub Plan on the SoMa LGBTQ Historic District would be ***less than significant***.

Western SoMa Light Industrial and Residential Historic District

The Western SoMa Light Industrial and Residential Historic District is an expansive historic district, covering a wide swath of the SoMa neighborhood. Several of the district's contributors along its western edge are within the boundary of the Hub Plan area, but none is on a site that would experience a change in the height and bulk district or allowable land use. Furthermore, even if new development were to occur on the sites containing district contributors within the

75 The documentation of the SoMa LGBTQ Historic District refers to this building as 95 Brady Street, but the Hub Plan refers to the site as 50 Otis Street. The differing addresses refer to the same property with Assessor's Parcel Number 3505/021.

Hub Plan area, the significance of the district would not be materially impaired because of the large size of the district, crossing much of the western portion of the SoMa neighborhood, and its composition that includes nearly 700 contributing resources. The remaining resources would continue to convey the character of a coherent mixed-use neighborhood dating to the early 20th century.

Streetscape and street network improvements under the Hub Plan include alley work proposed at Lafayette and Minna streets, which would extend into the northwestern corner of the Western SoMa Light Industrial and Residential Historic District. Activities would generally be limited to the provision of new trees, bollards, raised intersections, paving materials, and lighting. Furthermore, the existing paving materials, street lighting, and vegetation at Minna and Lafayette streets do not date to the district's period of significance and do not contribute to its historic setting. Alley improvements would occur at only two small streets at the edge of this expansive district, representing a change to the public realm within a limited portion of the district. The alley improvements proposed under the Hub Plan would not remove or obscure any physical features that express the district's identity as a sprawling mixed-use neighborhood primarily containing low-rise industrial and residential buildings. This change would furthermore represent a continuation of streetscape improvements that have taken place within the district since its period of significance.

The impact of the Hub Plan on the Western SoMa Light Industrial and Residential Historic District would be ***less than significant***.

Elgin Park-Pearl Street Reconstruction Historic District

In addition to the historic districts described above, which fully or partially overlap the Hub Plan area, the Elgin Park-Pearl Street Reconstruction Historic District is adjacent to the southwestern corner of the Hub Plan area. The Elgin Park-Pearl Street Reconstruction Historic District is physically separated from the Hub Plan area by the on-ramp to the Central Freeway that extends south of Octavia Boulevard. No new height and bulk districts or streetscape or street network improvements are proposed within the Elgin Park-Pearl Street Reconstruction Historic District. The nearest height limit increase proposed under the Hub Plan is at 170 Otis Street, which is approximately 400 feet east of the easternmost extent of the historic district. Under the Hub Plan, the Elgin Park-Pearl Street Reconstruction Historic District would retain the essential physical characteristics that convey its historic character as a dense concentration of early 20th-century residential buildings. Potential new development occurring east of the district under the Hub Plan would cause only a negligible change in the district's broader urban setting. The impact of the Hub Plan on the Elgin Park-Pearl Street Reconstruction Historic District would be ***less than significant***.

Summary of Impacts

Subsequent development projects occurring under the Hub Plan have the potential to demolish or alter in an adverse manner contributors to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District. Subsequent development projects may materially impair the district's significance and therefore result in a ***significant*** impact on this historic district. In addition, because of the potential for streetscape and street network improvements under the Hub Plan to relocate contributing features of the AWSS, streetscape and street network improvements could cause a substantial adverse change in the significance of built-environment resources, resulting in a ***significant*** impact on the AWSS. The impact of subsequent development projects and streetscape and street network improvements on all other historic districts within and adjacent to the Hub Plan area would be ***less than significant***.

Mitigation Measures

The following mitigation measures would also be required for any project proposed on the site of a contributor to the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District: M-CUL-1a, Avoid or Minimize Effects on Identified Built Environment Resources; M-CUL-1b, Prepare and Submit Historical Documentation of Built Environment Resources; M-CUL-1c, Develop and Implement an Interpretive Program for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; M-CUL-1d, Video Recordation for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; and M-CUL-1e, Architectural Salvage for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District.

One additional mitigation measure would be required to minimize the Hub Plan's impact on the Auxiliary Water Supply System:

M-CUL-1f: ***New Locations for Contributing Auxiliary Water Supply System Elements to Preserve Historic District Character.*** Where a streetscape or street network improvement proposed under the Hub Plan would require moving an Auxiliary Water Supply System hydrant, the San Francisco Planning Department shall conduct additional study to determine if it contributes to the historic significance of the Auxiliary Water Supply System. If the element is determined to be a contributing feature of the Auxiliary Water Supply System, the project sponsor shall work with the San Francisco Planning Department's preservation staff to determine a location where the contributing Auxiliary Water Supply System hydrant could be reinstalled to preserve the historic relationships and functionality that are character-defining features of the Auxiliary Water Supply System. Generally, hydrants shall be reinstalled near the corner or the intersection from where they were removed. Any hydrant found not to contribute to the significance of the Auxiliary Water Supply System could be removed or relocated without diminishing the historic integrity of the district. Furthermore, the project would require the San Francisco Planning Department to coordinate with San Francisco Public Works and adopt San Francisco Public Works Auxiliary Water Supply System contract specifications related to the protection of existing water and Auxiliary Water Supply System facilities during implementation of streetscape and street network improvements under the Hub Plan.

Significance after Mitigation

Mitigation Measure M-CUL-1a would be required to establish a review process by which subsequent development projects affecting the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District would be assessed for their level of impact on the district. If the avoidance measures are determined not to be feasible, subsequent measures (i.e., Mitigation Measures M-CUL-1b through M-CUL-1e) would be required in order to document and interpret for the public the significance of the affected historic district contributor and reuse the character-defining historic fabric of the resource in new construction or historic interpretation to the extent deemed feasible. The mitigation would partially compensate for impacts associated with development under the Hub Plan through comprehensive documentation and memorialization of the resource. However, these measures would not be enough to avoid, rectify, reduce, or compensate for the loss of built-environment resources. Because demolition of built-environment resources or alteration in an adverse manner could still occur, the impact would remain ***significant and unavoidable*** after the application of mitigation.

To reduce the potential significant impact on the AWSS, Mitigation Measure M-CUL-1f, as described above, would be required to protect AWSS features during implementation of streetscape and street network improvements and ensure that those AWSS features located where streetscape and street network improvements would occur would not be altered in an adverse manner. This measure would ensure that the streetscape and street network improvements proposed under the Hub Plan would not diminish the integrity of the AWSS. Therefore, following application of Mitigation Measure M-CUL-1f, the impact would be reduced to a ***less-than-significant*** level.

Impact CUL-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a substantial adverse change to individual built-environment resources and/or historic districts, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code. (Less than Significant)

30 Van Ness Avenue Project

The individual development project at 30 Van Ness Avenue is analyzed below at the project level. This project involves retention of portions of the existing five-story building located at the northeastern corner of the Market Street/Van Ness Avenue intersection and construction of a 45-story building that contains office, residential, and retail uses. The existing building at

30 Van Ness Avenue was constructed in 1908 but was substantially remodeled in 1960; it was evaluated as ineligible for listing in the national and California registers, and local landmark registry in 2010 as part of the Market and Octavia Augmentation Survey. Furthermore, the building at 30 Van Ness Avenue is not located within a historic district. The property is therefore not a historical resource for the purposes of CEQA. As such, partial retention of the existing building and construction of a new mixed-use tower on the site would not constitute material impairment of the significance of a historical resource located within the project site.

The proposed building at 30 Van Ness Avenue would add over 30 stories to the building that currently occupies the site. Therefore, the 30 Van Ness Avenue Project would introduce a highly visible tower on a prominent corner in central San Francisco that is within the immediate surroundings of known historical resources (inclusive of individual resources and historic districts), as represented in **Figure 3.A-1,** p. 3.A-20:

- The six-story former Masonic Temple at 25 Van Ness Avenue, which is locally designated under article 11 as a Category I significant building and has been formally found eligible for listing in the national register, is located directly across Van Ness Avenue, west of the project site.
- The building at 50 Fell Street, a historical resource that has been locally designated as a Category I significant building under article 11, is across from the northern boundary of the project site. The two- to four-story institutional building, designed in the Spanish Eclectic style, is situated between a 29-story residential tower at 100 Van Ness Avenue and 20-story residential building at 1 Polk Street.
- The building at 10 South Van Ness Avenue, a two-story building that has been determined eligible for listing in the California register, is southwest of the site for the 30 Van Ness Avenue Project, across the intersection of Market Street and Van Ness Avenue.
- The High School of Commerce at 135 Van Ness Avenue, a three-story building locally designated as Landmark No. 140 under article 10, is northwest of the site for the 30 Van Ness Avenue Project, across the intersection of Fell Street and Van Ness Avenue.
- The Civic Center Landmark District extends south to encompass the High School of Commerce and is located across the intersection of Fell Street and Van Ness Avenue from the 30 Van Ness Avenue project site; City Hall forms the core of the district and is located two blocks north of the 30 Van Ness Avenue project site.
- The Market Street Cultural Landscape District occupies the Market Street roadway immediately south of the 30 Van Ness Avenue project site.

The Hub Plan area is a densely developed urban neighborhood that has undergone a continuum of commercial, industrial, and residential development between the second half of the 19th century and the present day. Generally speaking, each historical resource in the Hub Plan area has experienced some degree of change in its setting since the time it gained significance. The building at 135 Van Ness Avenue is locally designed under article 10 on account of its architectural and historical importance (equivalent to national register/California register Criteria A/1 and C/3); the former Masonic Temple, and the building at 50 Fell Street are locally designated under article 11 because of their architectural significance (national register/California register Criteria C/3). As such, these buildings would not experience material impairment to their significance as a result of the podium extension and new tower at 30 Van Ness Avenue in their immediate setting. Although the 30 Van Ness Avenue Project would introduce new development in the vicinity that is of a larger scale than adjacent historical resources, the physical characteristics (i.e., forms, materials, decorative/stylistic elements) that allow the historical resources to embody the distinctive characteristics of a type, period, region, or method of construction or express high artistic value would not be removed.

The significance of 10 South Van Ness Avenue is not due to the building's architecture but rather its role as the location of the Fillmore West music venue during the late 1960s and early 1970s. The building's significance is related to its immediate surroundings insofar as they express a varied commercial area adjacent to the intersection of two of San Francisco's most heavily traveled transportation corridors. These aspects of the resource's setting would not be adversely altered as a result of the project at 30 Van Ness Avenue.

The 30 Van Ness Avenue project site is situated on the opposite side of the Van Ness Avenue-Fell Street intersection from the boundary of the Civic Center Landmark District and is located two blocks south of City Hall. As introduced under "Impacts on Historic Districts" above, the new tower constructed at 30 Van Ness Avenue would rise taller than City Hall but would be a sufficient distance away from the center of the Civic Center Landmark District so as not to compete with the visual primacy of City Hall within its district, and would not block any significant views of City Hall from surrounding neighborhoods.

The 30 Van Ness Avenue project site is adjacent to the Market Street Cultural Landscape District and contributes to the setting of that district because it, like all buildings adjacent to Market Street between The Embarcadero and Octavia Boulevard, is part of the streetwall that lines Market Street and reinforces the district's spatial organization. As described under "Impacts on Historic Districts" above, partial removal of the building at 30 Van Ness Avenue and construction of a new tower on the site would continue to reinforce the streetwalls alongside Market Street that frame Market Street and contextualize its importance as a circulation route and space for public engagement. Impacts of the 30 Van Ness Avenue Project on individual built-environment resources and/or historic districts would be ***less than significant***.

98 Franklin Street Project

The individual development project at 98 Franklin Street would involve construction of a 31-story residential tower over a five-story podium on the current location of a 100-space paved surface vehicular parking lot. No historical resource would be demolished or relocated to accommodate construction of the proposed tower. However, the 98 Franklin Street project site would be adjacent to the north and east sides of the Miramar Apartments at 20 Franklin Street/1580–1598 Market Street, and on the south side of Oak Street, immediately opposite the Young Men's Institute at 50 Oak Street. Two additional historical resources are adjacent to the 98 Franklin Street project site: 41 Franklin Street is located on the west side of Franklin Street opposite the 98 Franklin Street project site, and 150 Oak Street is located northwest across the Franklin and Oak streets.

The Miramar Apartments, Young Men's Institute, and 150 Oak Street qualify for inclusion in historical registers because they are architecturally significant. Construction of a 36-story building on the current site of a surface vehicular parking lot within their immediate surroundings would introduce a new adjacent building that is substantially taller than the historical resources, but would not materially impair the significance of any of these resources because the new development would not alter the resources' physical characteristics that allow them to embody the distinctive characteristics of a type, period, region, or method of construction or express high artistic value. Furthermore, 41 Franklin Street, which is located across Franklin Street from the 98 Franklin Street project site, qualifies for California register listing due to its association with post-earthquake reconstruction. Much of the building's historic setting dating to the early 20th century has subsequently been redeveloped, and the construction of a new 36-story building within a surface parking lot facing the east façade of the resource would not alter any of the physical characteristics (including its three-story scale, cladding materials, and design of two residential floors over a commercial storefront) that allow the building at 41 Franklin Street to convey the post-earthquake reconstruction period.

Additionally, the 98 Franklin Street project site would stand between two buildings that contribute to the Market Street Masonry Landmark District: the Miramar Apartments and the Whiteside Apartments at 150 Franklin Street, located two blocks to the north. The Market Street Masonry Landmark District is a discontiguous district. The linkage and continuity that characterize the Market Street Masonry Landmark District are expressed through similarity in materials and the architectural styles of its contributors, irrespective of the properties that lie between. The 98 Franklin Street Project would introduce a new tower between these two district contributors that would be over 30 stories taller than either building and would thus eliminate the current visual relationship between the two contributors. However, the proposed 98 Franklin Street tower would not remove the architectural style linkages between the two resources or undermine the Market Street Masonry Landmark District's broader commercial district setting, which conveys its historical and architectural significance.

The 98 Franklin Street Project also involves streetscape and street network improvements at Lily Street, which would extend one half-block into the eastern portion of the Hayes Valley Residential Historic District. Activities would generally be limited to the provision of new trees, bollards, lighting, raised crosswalks, paving materials, and other place-making and traffic-calming elements. The existing paving materials, street lighting, sidewalk configuration, and vegetation do not date to the district's period of significance and do not contribute directly to its historic setting. Furthermore, streetscape improvements proposed as part of the 98 Franklin Street Project would occur within one narrow alley at the edge of this district, representing a change to the public realm within a limited portion of the district. Such streetscape work would not remove or obscure any physical features that express the district's identity as a neighborhood containing a coherent collection of late 19th- and early 20th-century residential buildings. This change would furthermore represent a continuation of streetscape improvements that have taken place within the district since its period of significance.

Impacts of the 98 Franklin Street Project on individual built-environment resources and/or historic districts would be ***less than significant***.

Summary of Impacts

The proposed individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not demolish, destroy, relocate, or alter in an adverse manner any historical resource or its immediate surroundings to the extent that it could no longer convey its historical significance. The two individual development projects would therefore have a ***less-than-significant*** impact on historic built-environment resources.

Impact CUL-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of an individual built-environment resource and/or historic district, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code, from ground-borne vibration caused by temporary construction activities. (Less than Significant with Mitigation)

Construction activities occurring as a result of the Hub Plan, individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and streetscape improvements are analyzed for their potential to materially impair the significance of historical resources under Impact NOI-3 in Section 3.C, Noise.

Impact CUL-4. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could cause a substantial adverse change in the significance of an archaeological resource, as defined in section 15064.5. (Less than Significant with Mitigation)

Based on the results of nearby archaeological investigations, archival research, and a historical archaeological sensitivity analysis performed as part of the ARDTP for the Hub Plan and individual development projects, discoveries of significant archaeological resources are possible in portions of the Hub Plan area. In addition, one multi-component, one historic-period, and two prehistoric archaeological resources have been previously recorded in the Hub Plan area. A geoarchaeological sensitivity analysis performed as part of the ARDTP for the Hub Plan and individual development projects identified deposits (i.e., sand dunes and marshes) that retain moderate to high prehistoric archaeological sensitivity at depths ranging from 2 to 10 feet below ground surface across the entire Hub Plan area.

THE HUB PLAN

Ground-disturbing activities would occur during subsequent development projects under the Hub Plan, including streetscape and street network improvements, across the Hub Plan area. Subsequent development projects under the Hub Plan could include excavations for foundations and basement levels; the depth of these future excavations is unknown at this time. Streetscape and street network improvements and new building developments would occur in areas, and at depths, that are sensitive for both prehistoric and historical archaeological resources (see *Archaeological Context* section). Therefore, excavations from subsequent development and from the streetscape and street network changes have the potential to physically damage or destroy as-yet undocumented archaeological resources, resulting in ***significant*** impacts on archaeological resources.

Mitigation Measures

M-CUL-4a: ***Project-Specific Preliminary Archaeological Review for Projects Involving Soil Disturbance.*** This archaeological mitigation measure shall apply to any subsequent development project involving any soil-disturbing or soil-improving activities, including excavation, utility installation, grading, soil remediation, or compaction/chemical grouting 2 feet or more below ground surface, for which no archaeological assessment report has been prepared.

Projects to which this mitigation measure applies shall be subject to Preliminary Archaeological Review by the San Francisco Planning Department archaeologist.

Based on the Preliminary Archaeological Review, the Environmental Review Officer shall determine if there is a potential for effects on an archaeological resource, including human remains, and, if so, what further actions are warranted to reduce the potential effect of the project on archaeological resources to a less-than-significant level. Such actions may include project redesign to avoid the potential to affect an archaeological resource, or further investigations by an archaeological consultant, such as preparation of a project-specific Archaeological Research Design and Treatment Plan or the undertaking of an archaeological monitoring or testing program based on an archaeological monitoring or testing plan. The scope of the Archaeological Research Design and Treatment Plan, archaeological testing, or archaeological monitoring plan shall be determined in consultation with the Environmental Review Officer and consistent with the standards for archaeological documentation established by the Office of Historic Preservation for the purposes of compliance with the California Environmental Quality Act (Office of Historic Preservation, Preservation Planning Bulletin No. 5). Avoidance of effects on an archaeological resources is always the preferred option.

M-CUL-4b: ***Procedures for Accidental Discovery of Archaeological Resources for Projects Involving Soil Disturbance.*** This mitigation measure is required for projects that would result in soil disturbance and are not subject to Mitigation Measure M-CUL-4a.

Should any indication of an archaeological resource, including human remains, be encountered during any soil-disturbing activity of the project, the project head foreman and/or project sponsor shall immediately notify the Environmental Review Officer and immediately suspend any soil-disturbing activities in the vicinity of the discovery until the Environmental Review Officer has determined what additional measures should be undertaken.

If the Environmental Review Officer determines that an archaeological resource may be present within the project site, the project sponsor shall retain the services of an archaeological consultant from the pool of qualified archaeological consultants maintained by the San Francisco Planning Department archaeologist. The archaeological consultant shall advise the Environmental Review Officer as to whether the discovery is an archaeological resource, whether it retains sufficient integrity, and whether it is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant shall identify and evaluate the archaeological resource. The archaeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the Environmental Review Officer may require, if warranted, specific additional measures to be implemented by the project sponsor.

Measures might include preservation of the archaeological resource in situ, an archaeological monitoring program, an archaeological testing program, or an archaeological treatment program. If an archaeological treatment program, archaeological monitoring program, or archaeological testing program is required, it shall be consistent with the San Francisco Planning Department's Environmental Planning Division guidelines for such programs. The Environmental Review Officer may also require that the project sponsor immediately implement a site security program if the archaeological resource is at risk from vandalism, looting, or other damaging actions. If human remains are found, all applicable state laws will be followed, as outlined in Impact CUL-7, and an archaeological treatment program will be implemented in consultation with appropriate descendant groups and approved by the Environmental Review Officer.

The project archaeological consultant shall submit a Final Archaeological Resources Report to the Environmental Review Officer that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report.

Copies of the Draft Final Archaeological Resources Report shall be sent to the Environmental Review Officer for review and approval. Once approved by the Environmental Review Officer, copies of the Final Archaeological Resources Report shall be distributed as follows: California Archaeological Site Survey Northwest Information Center shall receive one copy, and the Environmental Review Officer shall receive a copy of the transmittal of the Final Archaeological Resources Report to the Northwest Information Center. The Environmental Planning Division of the San Francisco Planning Department shall receive one bound copy, one unbound copy, and one unlocked, searchable PDF copy on a compact disc of the Final Archaeological Resources Report, along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the Environmental Review Officer may require a different final report content, format, and distribution from that presented above.

M-CUL-4c: ***Requirement for Archaeological Monitoring for Streetscape and Street Network Improvements.*** Based on reasonable potential that archaeological resources may be present within the Hub Plan area, in instances where streetscape and street network improvements are proposed that include soil disturbance of 2 feet or more below the street grade, the following measures shall be undertaken to avoid any potentially significant adverse effects from the proposed project on buried or submerged historical resources and human remains and associated or unassociated funerary objects. The project sponsor shall retain the services of an archaeological consultant from the rotational Qualified Archaeological Consultants List maintained by the San Francisco Planning Department archaeologist. After the first project approval action, or as directed by the Environmental Review Officer, the project sponsor shall contact the San Francisco Planning Department archaeologist to obtain the names and contact information for the next three archaeological consultants on the Qualified Archaeological Consultants List. The archaeological consultant shall undertake an archaeological monitoring program. All plans and reports prepared by the consultant, as specified herein, shall be submitted first and directly to the Environmental Review Officer for review and comment and considered draft reports, subject to revision until final approval by the Environmental Review Officer. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the Environmental Review Officer, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level potential effects on a significant archaeological resource, as defined in California Environmental Quality Act Guidelines section 15064.5(a) and (c).

Consultation with Descendant Communities: On discovery of an archaeological site[76] associated with descendant Native Americans, overseas Chinese, or other potentially interested descendant group, an appropriate representative[77] of the descendant group and the Environmental Review Officer shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archaeological field investigations of the site and offer recommendations to the Environmental Review Officer regarding appropriate archaeological treatment of the site, recovered data from the site, and, if applicable, any interpretative treatment of the associated archaeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.

Archaeological Monitoring Program. The archaeological monitoring program shall minimally include the following provisions:

- The archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological monitoring program reasonably prior to commencement of any project-related soil-disturbing activities. The Environmental Review Officer, in consultation with the project archaeologist, shall determine which project activities shall be archaeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation,

---

76 The term "archaeological site" is intended here to minimally include any archaeological deposit, feature, burial, or evidence of burial.

77 An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American contact list for the City and County of San Francisco maintained by the California Native American Heritage Commission and, in the case of the overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the San Francisco Planning Department archaeologist.

foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archaeological monitoring because of the potential risk these activities pose to archaeological resources and their depositional context.

- The archaeological consultant shall undertake a worker training program for soil-disturbing workers that shall include an overview of expected resource(s), how to identify the evidence of the expected resource(s), and the appropriate protocol in the event of apparent discovery of an archaeological resource.
- The archaeological monitor(s) shall be present on the project site, according to a schedule agreed upon by the archaeological consultant and the Environmental Review Officer until the Environmental Review Officer has, in consultation with the archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits.
- The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis.
- If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile-driving/ construction crews and heavy equipment until the deposit is evaluated. In the case of pile driving or deep foundation activities (foundation, shoring, etc.), if the archaeological monitor has cause to believe that the pile driving or deep foundation activities may affect an archaeological resource, the pile driving or deep foundation activities shall be terminated until an appropriate evaluation of the resource has been made in consultation with the Environmental Review Officer. The archaeological consultant shall immediately notify the Environmental Review Officer of the encountered archaeological deposit. The archaeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, present the findings of this assessment to the Environmental Review Officer.

If the Environmental Review Officer, in consultation with the archaeological consultant, determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor, either:

- The proposed project shall be redesigned to avoid any adverse effect on the significant archaeological resource, or

- An archaeological data recovery program shall be implemented, unless the Environmental Review Officer determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.

If an archaeological data recovery program is required by the Environmental Review Officer, the archaeological data recovery program shall be conducted in accordance with an archaeological data recovery plan. The project archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological data recovery plan. The archaeological consultant shall prepare a draft archaeological data recovery plan that shall be submitted to the Environmental Review Officer for review and approval. The archaeological data recovery plan shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the archaeological data recovery plan shall identify which scientific/historical research questions are applicable to the expected resource, which data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.

The scope of the archaeological data recovery plan shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.
- *Cataloging and Laboratory Analysis*. Descriptions of selected cataloging system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Descriptions of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archaeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Descriptions of proposed report format and distribution of results.

- *Curation*. Descriptions of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains, Associated or Unassociated Funerary Objects. The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws, including immediate notification of the coroner of the City and County of San Francisco and, in the event of the coroner's determination that the human remains are Native American remains, notification of the California Native American Heritage Commission, which shall appoint a most likely descendant (Public Resources Code section 5097.98). The Environmental Review Officer shall also be immediately notified upon discovery of human remains.

The archaeological consultant, project sponsor, Environmental Review Officer, and most likely descendent shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (California Environmental Quality Act Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code section 5097.98 requirement that descendants make recommendations or preferences for treatment within 48 hours of being granted access to the site. The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the Environmental Review Officer to accept recommendations of a most likely descendant. The archaeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects, as specified in the treatment agreement, if such an agreement has been made or, otherwise, as determined by the archaeological consultant and the Environmental Review Officer. If no agreement is reached, state regulations shall be followed, including the reburial of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98).

Final Archaeological Resources Report. The archaeological consultant shall submit a Draft Final Archaeological Resources Report to the Environmental Review Officer that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. The Draft Final Archaeological Resources Report shall include a curation and deaccession plan for all recovered cultural materials. The Draft Final Archaeological Resources Report shall also include an Interpretation Plan for public interpretation of all significant archaeological features.

Copies of the Draft Final Archaeological Resources Report shall be sent to the Environmental Review Officer for review and approval. Once approved by the Environmental Review Officer, the consultant shall also prepare a public distribution version of the Final Archaeological Resources Report. Copies of the Final Archaeological Resources Report shall be distributed as follows: California Archaeological Site Survey Northwest Information Center shall receive one copy, and the Environmental Review Officer shall receive a copy of the transmittal of the Final Archaeological Resources Report to the Northwest Information Center. The Environmental Planning Division of the San Francisco Planning Department shall receive one bound and one unlocked, searchable portable document format copy on compact disc of the Final Archaeological Resources Report, along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of public interest in or the high interpretive value of the resource, the Environmental Review Officer may require a different or additional final report content, format, and distribution than that presented above.

Significance after Mitigation

With the implementation of Mitigation Measures M-CUL-4a, M-CUL-4b, and, in instances where street network improvements are proposed within the Hub Plan area, M-CUL-4c, Hub Plan-related impacts on archaeological resources would be reduced to ***less-than-significant*** levels.

30 Van Ness Avenue Project

The proposed project at 30 Van Ness Avenue would include partial retention of an existing five-story building that was constructed in 1908, which does not include a basement, and construction of an approximately 45-story building. The estimated amount of excavation at this location would be 51,000 cubic yards for the foundations and two-level basement. The depth of excavation is expected to be up to 48 feet below grade. Steel soldier piles would be driven at the perimeter of the site as part of a temporary shoring system, and deep auger cast piles would be installed in the BART zone of influence. Although there are no known archaeological resources in the project vicinity, proposed construction activity would extend below the known depth of fill and into undisturbed dune and marsh deposits, which have elevated potential for containing buried archaeological resources (see "Archaeological Sensitivity and Potential Prehistoric Archaeological Property Types in the Hub Plan Area and Vicinity, Based on Landform Analysis" section). Therefore, project-related excavations at this location have the potential to physically damage or destroy as-yet undocumented archaeological resources, resulting in ***significant*** impacts on archaeological resources.

Mitigation Measures

M-CUL-4d: ***Requirements for Archaeological Testing Consisting of Consultation with Descendent Communities, Testing, Monitoring, and a Report***. Based on a reasonable presumption that archaeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources and on human remains and associated or unassociated funerary objects. The project sponsor shall retain the services of an archaeological consultant from the rotational Department Qualified Archaeological Consultants List maintained by the San Francisco Planning Department archaeologist. After the first project approval action or as directed by the Environmental Review Officer, the project sponsor shall contact the San Francisco Planning Department archaeologist to obtain the names and contact information for the next three archaeological consultants on the Qualified Archaeological Consultants List. The archaeological consultant shall undertake an archaeological testing program as specified herein. In addition, the consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the Environmental Review Officer for review and comment, and shall be considered draft reports subject to revision until final approval by the Environmental Review Officer. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the Environmental Review Officer, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level potential effects on a significant archaeological resource as defined in California Environmental Quality Act Guidelines sections 15064.5 (a) and (c).

Consultation with Descendant Communities: On discovery of an archaeological site[78] associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group, an appropriate representative[79] of the descendant group and the Environmental Review Officer shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archaeological field investigations of the site and to offer recommendations to the Environmental Review Officer regarding appropriate archaeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archaeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.

Archaeological Testing Program. The archaeological consultant shall prepare and submit to the Environmental Review Officer for review and approval an archaeological testing plan. The archaeological testing program shall be conducted in accordance with the approved archaeological testing plan. The archaeological testing plan shall identify the property types of the expected archaeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine to the extent possible the presence or absence of archaeological resources and to identify and evaluate whether any archaeological resource encountered on the site constitutes a historical resource under the California Environmental Quality Act.

At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings to the Environmental Review Officer. If, based on the archaeological testing program, the archaeological consultant finds that significant archaeological resources may be present, the Environmental Review Officer in consultation with the archaeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archaeological testing, archaeological

---

78 The term "archaeological site" is intended here to minimally include any archaeological deposit, feature, burial, or evidence of burial.

79 An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and, in the case of the Overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the San Francisco Planning Department archaeologist.

monitoring, and/or an archaeological data recovery program. No archaeological data recovery shall be undertaken without the prior approval of the Environmental Review Officer or the San Francisco Planning Department archaeologist. If the Environmental Review Officer determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either:

- The proposed project shall be redesigned to avoid any adverse effect on the significant archaeological resource; or
- A data recovery program shall be implemented, unless the Environmental Review Officer determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.

Archaeological Monitoring Program. If the Environmental Review Officer in consultation with the archaeological consultant determines that an archaeological monitoring program shall be implemented, the archaeological monitoring program shall minimally include the following provisions:

- The archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological monitoring program reasonably prior to commencement of any project-related soil-disturbing activities. The Environmental Review Officer in consultation with the archaeological consultant shall determine which project activities shall be archaeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context.
- The archaeological consultant shall undertake a worker training program for soil-disturbing workers that shall include an overview of expected resource(s), how to identify the evidence of the expected resource(s), and the appropriate protocol in the event of apparent discovery of an archaeological resource.
- The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archaeological consultant and the Environmental Review Officer until the Environmental Review Officer has, in consultation with project archaeological consultant, determined that project construction activities could have no effects on significant archaeological deposits.

- The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis.
- If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/ construction activities and equipment until the deposit is evaluated. In the case of pile driving or deep foundation activities (foundation, shoring, etc.), if the archaeological monitor has cause to believe that the pile driving or deep foundation activities may affect an archaeological resource, the pile driving or deep foundation activities shall be terminated until an appropriate evaluation of the resource has been made in consultation with the Environmental Review Officer. The archaeological consultant shall immediately notify the Environmental Review Officer of the encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, and present the findings of this assessment to the Environmental Review Officer.

Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the Environmental Review Officer.

Archaeological Data Recovery Program. The archaeological data recovery program shall be conducted in accord with an archaeological data recovery plan. The archaeological consultant, project sponsor, and Environmental Review Officer shall meet and consult on the scope of the archaeological data recovery plan prior to preparation of a draft archaeological data recovery plan. The archaeological consultant shall submit a draft archaeological data recovery plan to the Environmental Review Officer. The archaeological data recovery plan shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is expected to contain. That is, the archaeological data recovery plan shall identify which scientific/historical research questions are applicable to the expected resource, which data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.

The scope of the archaeological data recovery plan shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.
- *Cataloguing and Laboratory Analysis*. Descriptions of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Descriptions of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archaeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archaeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Descriptions of proposed report format and distribution of results.
- *Curation*. Descriptions of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains, Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws, including immediate notification of the Office of the Chief Medical Examiner of the City and County of San Francisco and, in the event of the medical examiner's determination that the human remains are Native American remains, notification of the California Native American Heritage Commission, who shall appoint a most likely descendant (Public Resources Code section 5097.98). The Environmental Review Officer shall also be immediately notified upon discovery of human remains.

The archaeological consultant, project sponsor, Environmental Review Officer, and most likely descendent shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (California Environmental Quality Act Guidelines section 15064.5(d)) within six days of the discovery of the human remains. This proposed timing shall not preclude the Public Resources Code section 5097.98 requirement that descendants make recommendations or preferences for treatment within 48 hours of being granted access to the site. The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the Environmental Review Officer to accept recommendations of a most likely descendant. The archaeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archaeological consultant and the Environmental Review Officer. If no agreement is reached, state regulations shall be followed including the reburial of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Public Resources Code section 5097.98).

Final Archaeological Resources Report. The archaeological consultant shall submit a Draft Final Archaeological Resources Report to the Environmental Review Officer that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s) undertaken. The Draft Final Archaeological Resources Report shall include a curation and deaccession plan for all recovered cultural materials. The Draft Final Archaeological Resources Report shall also include an Interpretation Plan for public interpretation of all significant archaeological features.

Copies of the Draft Final Archaeological Resources Report shall be sent to the Environmental Review Officer for review and approval. Once approved by the Environmental Review Officer, the consultant shall also prepare a public distribution version of the Final Archaeological Resources Report. Copies of the Final Archaeological Resources Report shall be distributed as follows: California Archaeological Site Survey Northwest Information Center shall receive one copy and the Environmental Review Officer shall receive a copy of the transmittal of the Final Archaeological Resources Report to the Northwest Information Center. The Environmental Planning division of the San Francisco Planning Department shall receive one bound and one unlocked, searchable portable document format copy on compact disc of the Final Archaeological Resources Report along with copies of any formal site recordation forms (California Department of Parks and Recreation 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of public interest in or the high interpretive value of the resource, the Environmental Review Officer may require a different or additional final report content, format, and distribution than that presented above.

Significance after Mitigation

With implementation of Mitigation Measure M-CUL-4d, project-related impacts on archaeological resources would be avoided or minimized; when avoidance or minimization is impossible, impacts would be mitigated through archaeological testing. As a result, impacts on archaeological resources would be reduced to ***less than significant.***

98 FRANKLIN STREET PROJECT

The proposed project at 98 Franklin Street would include demolition of an existing surface vehicular parking lot and construction of a 31-story residential tower above a five-story podium, with one basement level to accommodate bicycle parking, loading, and other building services and two below-grade vehicular parking levels (a total of three basement levels). The project proposes a mat slab foundation with soil-cement columns across the entire site. The project proposes no building setback on the ground floor and excavation to a depth of 39 feet within the boundaries of the entire lot. The estimated amount of excavation at this location would be approximately 31,670 cubic yards. Specific underground utility relocations associated with this project are unknown but assumed to require excavation to a depth of more than 12 feet. This project also proposes improvements to Lily Street from Franklin Street to Gough Street, including a midblock crossing on Lily Street between Franklin and Gough streets and improvements on the western portion of Oak Street between Van Ness Avenue and Franklin Street. This would include ground-disturbing activities, such as those associated with the installation of lighting for people walking. Although there are no known archaeological resources in the project vicinity, proposed construction activity would extend below the known depth of fill and into undisturbed dune and marsh deposits, which have elevated potential for containing buried archaeological resources (see "Archaeological Setting" section). Therefore, project-related excavations at this location have the potential to physically damage or destroy as-yet undocumented archaeological resources, resulting in ***significant*** impacts on archaeological resources.

Mitigation Measures

Mitigation Measure M-CUL-4d, described above for the 30 Van Ness Avenue Project, would also be required for the 98 Franklin Street Project.

Significance after Mitigation

With implementation of Mitigation Measure M-CUL-4d, project-related impacts on archaeological resources would be avoided or minimized; when avoidance or minimization is impossible, impacts would be mitigated for through archaeological testing. As a result, impacts on archaeological resources would be reduced to ***less than significant***.

Impact CUL-5. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

As described above, there are no known extant archaeological resources that contain human remains within the Hub Plan area; CA-SFR-28 was discovered in the Hub Plan area but was removed during construction of the Civic Center BART station. However, proposed construction activity associated with subsequent development projects under the Hub Plan, the streetscape and street network improvements, and the two individual development projects, would extend below the known depth of fill and into undisturbed dune and marsh deposits, which have elevated potential for containing buried archaeological resources and associated human remains. Therefore, excavations related to the Hub Plan and the two individual development projects have the potential to damage or destroy known archaeological resource and/or as-yet undocumented archaeological resources that include human remains, resulting in a ***significant*** impact.

Mitigation Measures

Impacts on archaeologically significant human remains are addressed under Impact CUL-3 and would be mitigated to a less-than-significant level with implementation of Mitigation Measures M-CUL-4a, M-CUL-4b, and M-CUL-4c for the Hub Plan and streetscape improvements as well as Mitigation Measure M-CUL-4d for the individual projects.

Significance After Mitigation

Therefore, impacts on human remains would be ***less than significant*** after implementation of Mitigation Measures M-CUL-4a, M-CUL-4b, and M-CUL-4c for the Hub Plan and streetscape improvements and Mitigation Measure M-CUL-4d for the individual projects.

Cumulative Impacts

Impact C-CUL-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built-environment resources. (Significant and Unavoidable with Mitigation)

The cumulative context for historic built-environment resources includes urban development projects and transportation and streetscape improvements occurring within and surrounding the Hub Plan area, which together could lead to impacts to the built environment. The past, present, and reasonably foreseeable future projects within and surrounding the Hub Plan area include numerous development projects that propose new buildings, which would range from five to 55 stories in height, as well as streetscape and public realm improvements. The past, present, and reasonably foreseeable projects include projects that are located within or overlap a portion of the Hub Plan area, as well as projects within its immediate vicinity in the adjacent

Hayes Valley, Mission, Civic Center, and SoMa neighborhoods. The cumulative analysis for built-environment resources also considers the Central SoMa, Western SoMa, and Eastern Neighborhoods Plans, which would lead to changes in the built environment in neighborhoods in the vicinity of the Hub Plan area. The Central SoMa Plan area overlaps with the Western SoMa Light Industrial and Residential Historic District, which also extends into the Hub Plan area. These cumulative projects, in concert with the Hub Plan, have the potential to alter historic built-environment resources (including individual resources and historic districts). As described further below, the total cumulative impact is considered significant.

THE HUB PLAN

As described under Impact CUL-1, the Hub Plan may result in subsequent development occurring on the sites of individual built-environment resources that would involve the resources' demolition or substantial alteration. Among the past, present, and reasonably foreseeable projects are projects that also propose to demolish built-environment resources, including the 30 Otis Street Project (which has demolished the historical resource at 14-18 Otis Street) and the 10 South Van Ness Avenue Project. In addition, the 33 individual built-environment resources within the Hub Plan area that are not locally designated under article 10 or 11 also have the potential to be demolished or substantially altered as a result of the Hub Plan. The site of one of the past, present, or foreseeable projects, the 1629 Market Street Project, encompasses two of the individual built-environment resources, 1601–1605 Market Street and 1629–1637 Market Street. The result of the past, present, and reasonably foreseeable projects is the loss of individual buildings that are listed in, or have been determined eligible for listing in, the national or California register or local historical resource inventory, which is a ***significant*** impact. The Hub Plan's potential to lead to demolition or substantial alteration of individual built-environment resources would amount to a considerable contribution to a significant cumulative impact.

Historic districts within or adjacent to the Hub Plan area would experience a cumulative impact if Hub Plan activities as well as past, present, and foreseeable projects and plans would be implemented within or adjacent to a single historic district and the combined projects and plans would discernibly interrupt the sense of linkage or continuity that characterizes the district such that its significance would be materially impaired.

Although the Jessie-McCoppin-Stevenson Streets Reconstruction Historic District would experience a significant impact as a result of the Hub Plan, as described under Impact CUL-2, no additional changes would occur to this district as a result of past, present, or foreseeable projects. It is assumed that, for several of the additional historic districts discussed above under Impact CUL-2, implementation of cumulative projects would result in a cumulative impact. For example, the Civic Center Landmark District or the Market Street Cultural Landscape District would experience substantial alterations to character-defining features during implementation of the Better Market Street Project or the Civic Center Public Realm Plan, which would constitute significant and unavoidable impacts on those built-environment resources. The cumulative impact on the Civic Center Landmark District and the Market Street Cultural Landscape District would be ***significant***. As demonstrated above, however, the Hub Plan itself would result in only nominal changes to the significant characteristics and settings of the Civic Center Landmark District and Market Street Cultural Landscape District such that the Hub Plan itself would not contribute considerably to cumulative impacts on these historic districts. Furthermore, the Hub Plan would have the potential to substantially change the characteristics of the AWSS, which would also experience a degree of change as the result of other projects (i.e., the relocation of hydrants along the Market Street corridor under the Better Market Street Project). Overall, these projects would result in a ***significant*** cumulative impact on the AWSS, and the Hub Plan's contribution would be considerable.

Mitigation Measures

Implementation of Mitigation Measures M-CUL-1a, Avoid or Minimize Effects on Identified Built Environment Resources; M-CUL-1b, Prepare and Submit Historical Documentation of Built Environment Resources; M-CUL-1c, Develop and Implement an Interpretive Program for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; M-CUL-1d, Video Recordation for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District; and M-CUL-1e, Architectural Salvage for Projects Demolishing or Altering a Historical Resource or Contributor to a Historic District, would not reduce the Hub Plan's contribution to the cumulative impact on individual built-environment resources or historic district contributors to a less-than-considerable level because these measures would not be enough to avoid, rectify, reduce, or compensate for the loss of individual built-environment resources.

Implementation of M-CUL-1f, New Locations for Contributing Auxiliary Water Supply System Elements to Preserve Historic District Character, would ensure that those AWSS features located where streetscape and street network improvements would occur under the Hub Plan would not be altered in an adverse manner. With the implementation of M-CUL-1f, all AWSS features moved as a result the Hub Plan would remain near their current locations and would continue to support the operation of the overall system such that the Hub Plan's contribution to the cumulative impact would be reduced to a less-than-considerable level.

Significance after Mitigation

Because demolition of built-environment resources or alteration in an adverse manner could still occur, the cumulative impact of the Hub Plan on individual built-environment resources would remain ***significant and unavoidable*** after the application of mitigation.

Impact C-CUL-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in demolition and/or alteration of built-environment resources. (Less than Significant)

As discussed under Impact C-CUL-1, cumulative projects, in concert with the two individual development projects, have the potential to alter historic built-environment resources (including individual resources and historic districts); the total cumulative impact is considered significant.

30 VAN NESS AVENUE PROJECT

As discussed above, the total cumulative impact to historic resources is considered significant. As discussed under CUL-2, the existing building at 30 Van Ness Avenue is not a historical resource for the purposes of CEQA, and development of the site would result in less-than-significant impacts on nearby historic districts. Thus, the 30 Van Ness Avenue Project would not result in a cumulatively considerable contribution to this overall cumulative impact; the impact would be ***less than significant***.

98 FRANKLIN STREET

As discussed above, the total cumulative impact to historic resources is considered significant. As discussed under CUL-2, no historical resource would be demolished or relocated to accommodate construction of the proposed tower and development of the site would result in less-than-significant impacts on nearby historic districts. Thus, the 98 Franklin Street Project does not result in a cumulatively considerable contribution to this overall cumulative impact; the impact would be ***less than significant***.

Impact C-CUL-3. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, could result in a significant cumulative impact on archaeological resources and human remains. (Less than Significant with Mitigation)

The cumulative context for archaeological resources and human remains includes urban development projects and transportation and streetscape improvements occurring within and surrounding the Hub Plan area, which together could lead to ground-disturbing activities that could result in impacts on archaeological resources and human remains. The past, present, and reasonably foreseeable future projects within and surrounding the Hub Plan area include numerous development projects that propose new buildings, which would range from five to 55 stories in height, as well as streetscape and public realm improvements. The cumulative analysis for archaeological resources considers nearby projects that involve ground disturbance, such as the projects at 10 South Van Ness Avenue and 1500 Mission Street, as well as the Better Market Street and Van Ness Avenue Bus Rapid Transit projects, all of which have identified the potential for archaeological discovery. These cumulative projects, in concert with the Hub Plan and two individual development projects, have the potential to demolish, destroy, relocate, or alter archaeological resources and human remains. Taken together, the Hub Plan and the identified cumulative projects have the potential to result in an overall cumulative impact on archaeological resources and/or human remains.

THE HUB PLAN

As described under Impact CUL-4, the Hub Plan would result in ground-disturbing activities in areas identified as having moderate to high sensitivity for containing buried undocumented historical and prehistoric archaeological resources, which may also contain human remains. These ground-disturbing activities have the potential to affect undocumented archaeological resources and human remains. Therefore, the Hub Plan, when considered with the past, present, and reasonably foreseeable future projects within and surrounding the Hub Plan area that would include ground-disturbing activities with the potential to encounter sediments that have moderate to high archaeological sensitivity, has the potential to contribute considerably to the overall cumulative impact on archaeological resources and human remains; the impact would be ***significant***.

30 VAN NESS AVENUE PROJECT

The proposed 30 Van Ness Avenue Project would result in excavation to a depth of 48 feet below grade within the boundaries of the entire lot. These ground-disturbing activities would occur in areas identified as having moderate to high sensitivity for containing buried undocumented historical and prehistoric archaeological resources, which may also contain human remains. Therefore, these ground-disturbing activities have the potential to affect undocumented archaeological resources and human remains, as discussed above under Impact CUL-4. The 30 Van Ness Avenue Project, when considered with cumulative projects that would include ground-disturbing activities that have the potential to encounter sediments that have moderate to high archaeological sensitivity, has the potential to contribute considerably to the overall cumulative impact on archaeological resources and human remains; the impact would be ***significant***.

98 FRANKLIN STREET

The proposed 98 Franklin Street Project would result in excavation to a depth of 39 feet within the boundaries of the entire lot. Specific underground utility relocations associated with this project are unknown but assumed to require excavation to a depth of more than 12 feet. These ground-disturbing activities would occur in areas identified as having moderate to high sensitivity for containing buried undocumented historical and prehistoric archaeological resources, which may also contain human remains, as discussed above under Impact CUL-4. Therefore, these ground-disturbing activities have the potential to affect known and undocumented archaeological resources and human remains. The 98 Franklin Street Project, when considered with cumulative projects that would include ground-disturbing activities that have the potential to encounter sediments that have moderate to high archaeological sensitivity, has the potential to contribute considerably to the overall cumulative impact on archaeological resources and human remains; the impact would be ***significant***.

SUMMARY OF IMPACTS

The Hub Plan and the two individual projects, when considered with past, present, and reasonably foreseeable projects, would contribute considerably to a cumulative impact on archaeological resources and human remains because they have the potential to damage or destroy as-yet undocumented archaeological resources and human remains that have the potential to be eligible for listing in the California register.

Mitigation Measures

Implementation of Mitigation Measure M-CUL-4a, Project-Specific Preliminary Archaeological Review for Projects Involving Soil Disturbance; M-CUL-4b, Procedures for Accidental Discovery of Archaeological Resources for Projects Involving Soil Disturbance; Mitigation M-CUL-4c, Requirement for Archaeological Monitoring for Streetscape and Street Network Improvements; and M-CUL-4d, Requirements for Archaeological Testing Consisting of Consultation with Descendent Communities, Testing, Monitoring, and a Report, would reduce cumulative impacts of the Hub Plan and individual projects on archaeological resources and human remains ***to less-than-significant*** levels.

Significance after Mitigation

With implementation of mitigation measures, the contribution from the Hub Plan and individual development projects on archaeological resources and human remains would be reduced to less than considerable level. The impact is would be ***less than significant*** after mitigation.

3.B TRANSPORTATION AND CIRCULATION

This section presents existing transportation and circulation conditions and analyzes potential program-level, project-level, and cumulative impacts on transportation and circulation during construction and operation of the Hub Plan,[1] two individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and the Hub Housing Sustainability District (HSD). Transportation-related topics include vehicle miles traveled (VMT), driving hazards, transit, people walking and people bicycling, loading, emergency access, vehicular parking, and construction activities that may affect the transportation network. Supporting detailed technical information is included in Appendix D, *Transportation Supporting Information.*

Issues identified in response to the notice of preparation (NOP) (Appendix A) related to the proposed project's physical environmental impacts were considered in preparing this analysis. The City and County of San Francisco (City) received 10 written and five oral NOP comments related to transportation and circulation. The NOP comments were related to transit capacity, loading, walkable streets, and vehicular parking, and are available for review in Appendix A.

ENVIRONMENTAL SETTING

TRANSPORTATION STUDY AREA

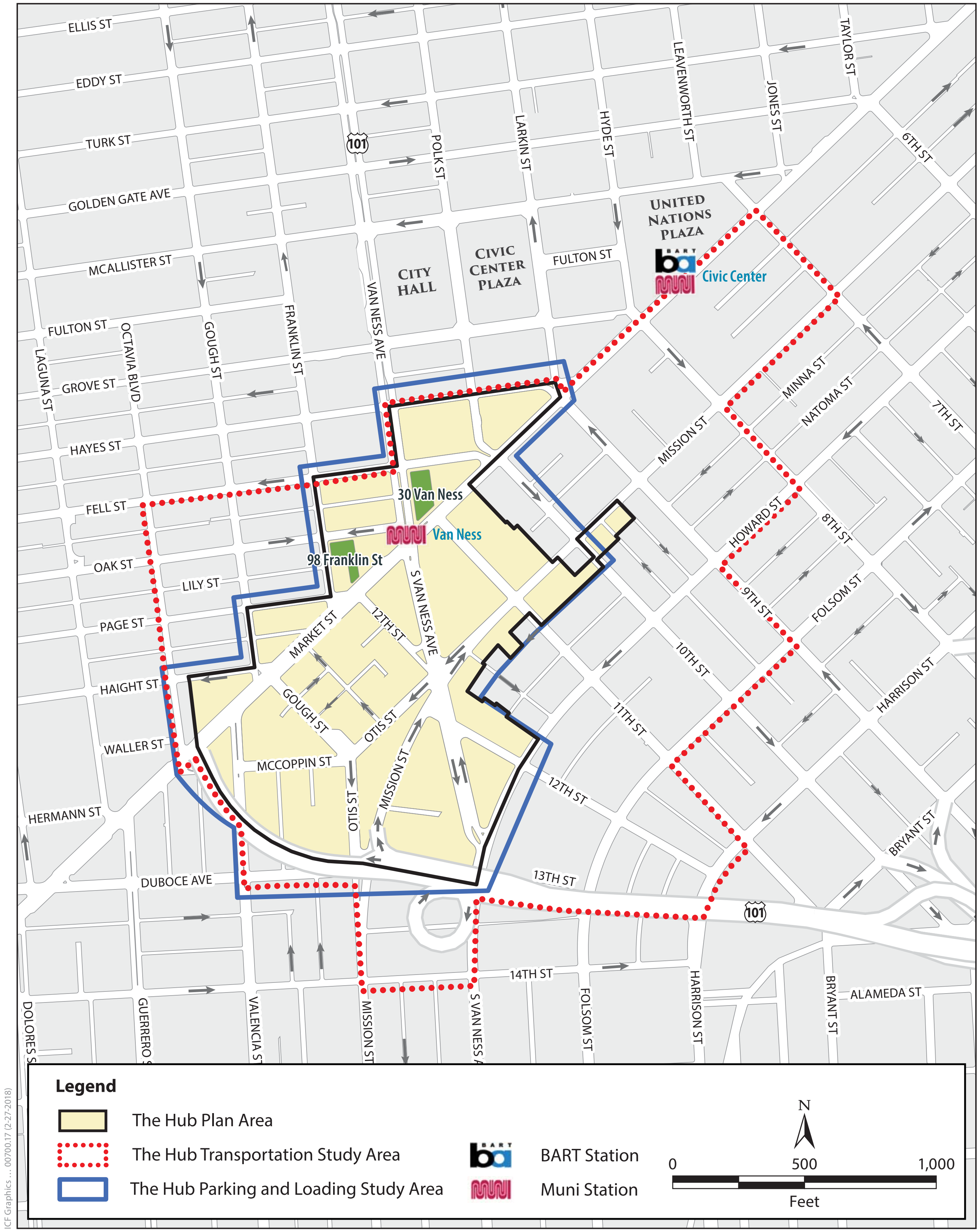
The Hub Plan could affect transportation and circulation in areas surrounding the Hub Plan area. Therefore, a larger transportation study area that encompasses the Hub Plan area and other areas, including the sites for the 30 Van Ness Avenue Project and 98 Franklin Street Project, was identified. The transportation study area is generally bounded by Hayes and Market streets to the north, Octavia Boulevard to the west, Duboce Avenue and 13th Street to the south, and Seventh through 11th streets, which zigzag between Market and 13th streets to the east. **Figure 3.B-1** shows the extent of the Hub Plan area, the location for the two individual development projects, and the boundaries of the transportation study area. The boundaries of the smaller parking and loading study area are also presented on **Figure 3.B-1**.

LOCAL AND REGIONAL ROADWAYS

Regional Vehicular Access

U.S. 101 and I-80 provide primary regional highway access to the Hub Plan area. U.S. 101 serves San Francisco and the Peninsula/South Bay; it also extends northward via the Golden Gate Bridge to the North Bay. Van Ness Avenue serves as U.S. 101 between Market Street and

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).



Note: The Hub Parking and Loading Study Area excludes portions of the Hub Plan Area that only cover a partial block face.

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.B-1
Transportation Study Area and Existing Roadway Network

Lombard Street. I-80 connects San Francisco to the East Bay and points east via the San Francisco-Oakland Bay Bridge. U.S. 101 and I-80 merge about 1 mile southeast of the Hub Plan area. Access to I-80/U.S. 101 is provided via on-ramps and off-ramps (some within the Hub Plan area) on Bryant Street at Eighth, Ninth, and 10th streets; on Harrison Street at Seventh and Eighth streets; at South Van Ness Avenue and 13th/Division streets; at Mission Street and Duboce Avenue/13th Street; and at Market Street at Octavia Boulevard.

I-280 is generally a north–south freeway that connects San Francisco with the Peninsula (e.g., Daly City, San Mateo) and the South Bay (e.g., San Jose). I-280 has an interchange with U.S. 101 approximately 3 miles south of the Hub Plan area; it terminates in San Francisco at surface streets in the Mission Bay neighborhood. Near the Hub Plan area, I-280 is a six- to eight-lane bidirectional freeway. The closest access to I-280 is provided at Sixth Street (at Brannan Street) and King Street (at Fifth Street), approximately 1.5 miles southeast of the Hub Plan area.

Local Vehicular Access

This section provides a description of the existing local roadway system in the vicinity of the Hub Plan area. It includes information regarding the San Francisco General Plan roadway designation, the number of travel lanes, vehicular traffic flow direction, and bicycle facilities. Appendix D to this EIR includes the street classification and general plan designation of other local streets in the transportation study area.[2]

The Hub Plan area is located where two street grids intersect. Streets run north–south and east–west north of Market Street and northwest–southeast and southwest–northeast south of Market Street. South of Market Street, streets that run northwest/southeast are generally considered north–south streets (e.g., Valencia Street, Gough Street, South Van Ness Avenue), whereas streets that run southwest/northeast are generally considered east–west streets (e.g., Mission Street, 13th Street).

The grid offers multiple route options for intra-city travel or access to the regional highway network. These route options include the following streets: Octavia Boulevard, Duboce and South Van Ness avenues, and Market, Mission, 10th, Ninth, Eighth, and Seventh streets.

---

2 City road designations within the San Francisco General Plan include (listed in the order of potential vehicle capacity) freeways, major arterials, transit conflict streets, secondary arterials, recreational streets, collector streets, and local streets. Each of these roadways has a different potential capacity for mixed-flow traffic and changes that might alter traffic patterns on the given roadway. The general plan also identifies certain Transit Preferential Streets from among the city's various roadways, each of which is identified as a Primary Transit Street—Transit Oriented, Primary Transit Street—Transit Important, or Secondary Transit Street. The Pedestrian Network classifies streets throughout the city. It identifies streets that have been developed primarily for use by people walking and includes the Citywide Pedestrian Network Streets and Neighborhood Pedestrian Streets. City and County of San Francisco, *San Francisco General Plan*, 2007, Transportation Element, *http://generalplan.sfplanning.org/I4_Transportation.htm#TRA_REG_5_4*.

Numerous streets within the transportation study area are one-way streets, as shown in **Figure 3.B-1**, p. 3.B-2, and have multiple travel lanes. The general plan contains definitions and regulatory requirements for the variety of roadway classifications that make up the city's street network; it also includes roadway designations. Within the transportation study area, Franklin, Fell, Howard, Folsom, Harrison, Seventh, Eighth, Ninth, and 10th streets; portions of Market, Oak, and Gough streets; a portion of Octavia Boulevard; Van Ness Avenue; and a portion of Duboce Avenue are classified as Major Arterials.[3] One-way streets classified as Major Arterials typically have three to five travel lanes in each direction, while bidirectional streets generally have one to three travel lanes. Van Ness Avenue and Mission, Market, 11th, Page, and Fell streets are identified as Transit Preferential Streets. Market, Mission, Franklin, and Gough streets; a portion of 11th Street; Van Ness Avenue; and a portion of Octavia Boulevard are identified as Neighborhood Pedestrian Streets. Streets within the transportation study area that are part of or intersect the Vision Zero High Injury Network[4] include sections of Gough, Oak, Valencia, Market, Mission, Howard, Folsom, Harrison, Eighth, Ninth, 10th, 11th, and 13th streets as well as Van Ness Avenue and Octavia Boulevard.

Key streets within the transportation study area, including those where streetscape and street network improvements are proposed as part of the Hub Plan and/or streets adjacent to the proposed development projects at 30 Van Ness Avenue and 98 Franklin Street, are listed below.

Fell Street is an east–west roadway between Stanyan and Market streets. It is a one-way street westbound between Golden Gate Park and Gough Street (forming a one-way couplet with Fell Street), two-way street between Gough Street and Van Ness Avenue, and one-way street eastbound between Van Ness Avenue and Market Street. At Market Street, Fell Street becomes 10th Street. Within the transportation study area, Fell Street has three travel lanes and on-street vehicular parking on both sides of the street, except during the p.m. peak period (4 p.m. to 6 p.m.) when vehicular parking on the south side of the street is converted to an extra westbound travel lane. In the general plan, Fell Street is designated as a Major Arterial in the Congestion Management Program Network. Fell Street west of Octavia Boulevard is part of the Metropolitan Transportation System Network.

---

3 Major arterials are cross-town thoroughfares whose primary purpose is to link districts within the city and distribute vehicle traffic to and from the regional freeway facilities. Within the transportation study area, Market, Mission, Howard, Folsom, and Harrison streets are identified in the general plan as major east–west arterials, and Van Ness Avenue, Franklin Street, and Gough Street are identified as major north–south arterials.

4 The Vision Zero High Injury Network maps corridors with a high concentration of severe injuries and deaths, with an emphasis on those involving people walking and people bicycling. The High Injury Network analysis is based on a multiyear corridor-level analysis of collision data, helping inform transportation injury prevention initiatives and investments to save lives and reduce the severity of injuries.

Franklin Street is a one-way, northbound-only arterial connecting Market Street to Lombard Street (U.S. 101 to the Golden Gate Bridge), forming a one-way couplet with Gough Street, which operates southbound only south of Sacramento Street. Franklin Street generally has three or four travel lanes (i.e., four travel lanes when p.m. peak-period tow-away restrictions are in effect) and vehicular parking on both sides of the street. The general plan classifies Franklin Street as a Major Arterial in the Congestion Management Program Network, part of the Metropolitan Transportation System Network,[5] and a Neighborhood Commercial Street between Golden Gate Avenue and Market Street.

Duboce Avenue is an east–west roadway between Mission Street and Buena Vista Terrace; Duboce Avenue is closed to vehicular traffic between Market and Church streets. Between Mission and Market streets, Duboce Avenue has two or three westbound travel lanes and one or two eastbound lanes, with on-street vehicular parking on both sides of the street. Between Church Street and Buena Vista Terrace, Duboce Avenue has one or two lanes in each direction and vehicular parking on both sides of the street. The general plan identifies Duboce Avenue as a Transit Preferential Street (transit oriented) between Church and Noe streets. There is a two-way class III bicycle route with shared-lane markings on Duboce Avenue between Sanchez and Fillmore streets, an eastbound class III bike route between Fillmore and Church streets, a westbound class II bike lane between Fillmore and Church streets, and a class I off-street bike path between Church and Market streets. The general plan identifies Duboce Avenue between Mission and Market streets as a Major Arterial in the Congestion Management Program Network and part of the Metropolitan Transportation System Network.

Gough Street connects Lombard Street (U.S. 101 from the Golden Gate Bridge) to Otis Street. Gough Street is a one-way southbound-only arterial south of Sacramento Street to Market Street, forming a one-way couplet with Franklin Street (which operates northbound only). The approximately 400-foot segment of Gough Street between Market and Otis streets is a two-way street. Gough Street generally has three or four travel lanes (i.e., four travel lanes when p.m. peak-period tow-away restrictions are in effect), with vehicular parking on both sides of the street. In the general plan, Gough Street is designated as a Major Arterial in the Congestion Management Program Network, part of the Metropolitan Transportation System network, and a Neighborhood Commercial Street between Golden Gate Avenue and Market Street.

---

5 Congestion Management Program Network refers to the network of freeways, state highways, and major arterials established in accordance with state congestion management legislation. Transit Conflict Streets are included in this network as well. The Metropolitan Transportation System Network is a regional network of freeways, major and secondary arterials, transit conflict streets, and recreational streets for San Francisco that meet nine criteria developed by the Metropolitan Transportation Commission as part of the Regional Transportation Plan.

Hayes Street is an east-west roadway that extends between Larkin Street and Golden Gate Park. Hayes Street operates one-way westbound between Larkin Street and Van Ness Avenue, with three westbound travel lanes, and operates two-way west of Van Ness Avenue with one travel lane in each direction, with the exception of the segment between Van Ness Avenue and Gough Street where two to three westbound travel lanes are provided. Hayes Street generally has on-street vehicular parking on both sides of the street; however, there is no parking on the north side of the street between Larkin and Polk streets. In the general plan, Hayes Street is classified as a Major Arterial between Larkin and Gough streets in the Congestion Management Program Network, and is designated as a Neighborhood Commercial Street.

Market Street is an east–west roadway from The Embarcadero to Portola Drive in the Twin Peaks area. Generally, Market Street has two lanes in each direction. Between Fremont and Castro streets, Market Street has streetcar tracks in each direction in the center travel lanes, which accommodate the San Francisco Municipal Railway's (Muni's) F Market & Wharves historic streetcar. There are transit-only lanes on Market Street between 12th Street/Van Ness Avenue and Third Street in the eastbound direction and between Van Ness Avenue and Third Street in the westbound direction. Market Street has separated bikeways or bicycle lanes between Castro Street and halfway between Eighth and Ninth streets in the eastbound direction and between Eighth and Castro streets in the westbound direction. Sharrows are painted in the curb lanes at all other locations on Market Street to indicate that bicycles and vehicles share these lanes. In the general plan, Market Street is classified as a Major Arterial west of Van Ness Avenue in the Congestion Management Program Network and a Transit Conflict Street east of Van Ness Avenue. It is also part of the Metropolitan Transportation System Network, designated as a Neighborhood Commercial Street, a Primary Transit Street – Transit Oriented, and part of the Citywide Pedestrian Network. On-street vehicular parking is not permitted on Market Street in the transportation study area.

Oak Street is an east–west roadway between Van Ness Avenue and Golden Gate Park. West of Franklin Street, Oak Street operates in the eastbound direction only and forms a one-way couplet with Fell Street. Oak Street generally has three eastbound lanes, with on-street vehicular parking on both sides of the street. For the one-block section between Franklin Street and Van Ness Avenue, Oak Street operates in the westbound direction, with one westbound travel lane and on-street vehicular parking on both sides of the street. In the general plan, Oak Street between Franklin Street and Golden Gate Park is classified as a Major Arterial in the Congestion Management Program Network and part of the Metropolitan Transportation System Network.

Otis Street consists of two blocks in an east–west direction (serving westbound vehicular traffic) between the intersection of South Van Ness Avenue and Otis/Mission/12th streets and the intersection of Otis/Gough/McCoppin streets. It runs in a north–south direction (serving southbound vehicular traffic) between the intersections of Otis/Gough/McCoppin streets and Otis/Mission/Duboce/13th streets. Otis Street generally has four travel lanes and on-street metered vehicular parking on both sides. A class II bicycle lane is provided on the north side of the one-way segment of Otis Street between South Van Ness Avenue and Gough Street. In the general plan, Otis Street is also a designated Neighborhood Commercial Street and a Primary Transit Street – Transit Oriented. At the intersection of South Van Ness Avenue and Otis/Mission/12th streets, the northbound one-way vehicular traffic from Mission Street makes a left turn onto one-way Otis Street.

South Van Ness Avenue is a north–south major arterial between Market and Cesar Chavez streets with two travel lanes in each direction, and on-street parking generally on both sides of the street. South Van Ness Avenue is classified as a Major Arterial in the Congestion Management Program Network in the general plan, a Metropolitan Transportation System Network street, and part of the Citywide Pedestrian Network. Between Market and Mission streets, it is also designated a Neighborhood Commercial Street and a Primary Transit Street – Transit Important. Between Market and 13th streets, South Van Ness Avenue is part of U.S. 101 (see description of Van Ness Avenue, below). Construction of the Van Ness Bus Rapid Transit (BRT) Project, part of the Van Ness Improvement Project, is currently under way. Following completion of that project, South Van Ness Avenue between Market and Mission streets will have two mixed-flow travel lanes in each direction and two transit-only lanes within a median BRT right-of-way.

Van Ness Avenue is the major north–south arterial in the central section of San Francisco between Beach and Market streets. Van Ness Avenue is designated a Major Arterial in the Congestion Management Program Network and a Neighborhood Commercial Street in the general plan. It is also part of the Metropolitan Transportation System Network, a Primary Transit Street – Transit Important, and part of the Citywide Pedestrian Network. As noted under the discussion of South Van Ness Avenue, above, construction of the Van Ness BRT Project is under way. That project will result in two mixed-flow travel lanes in each direction on Van Ness Avenue/South Van Ness Avenue between Mission and Bay streets and two transit-only lanes (one transit-only lane in each direction) within a median BRT right-of-way between Lombard and Mission streets. With the exception of the northbound left turn at Lombard Street and the southbound left turn at Broadway, left turns are not permitted on Van Ness Avenue between Lombard and Market streets. At completion of construction of the Van Ness Avenue BRT Project, on-street vehicular parking will be provided at select locations along the corridor.

Twelfth Street is a north–south roadway between Market and Harrison streets; 12th Street is discontinuous at South Van Ness Avenue. Between Market and Otis streets, 12th Street has one travel lane in each direction, with on-street vehicular parking on both sides of the street.

Thirteenth Street is an east–west roadway between Bryant and Mission streets. It has two or three travel lanes in each direction; on-street vehicular parking is generally provided on both sides of the street. Thirteenth Street continues to the west as Duboce Avenue. The general plan identifies 13th Street as a Major Arterial in the Congestion Management Program Network and part of the Metropolitan Transportation System Network.

Alleys. In addition to these primary streets, there are numerous, and often discontinuous, east–west and north–south alleys. These are generally one-lane streets, with on-street vehicular parking allowed on one or both sides of the street (see **Figure 3.B-1**, p. 3.B-2). Alleys where streetscape and street network improvements are proposed as part of Hub Plan and the 98 Franklin Street Project include Lily Street, located north of Market Street, as well as Rose, Colton, Minna, Lafayette, Stevenson, Brady, Plum, and Jessie streets; Colusa Place; and Chase Court, located south of Market Street.

Traffic Volumes

Intersection turning movement counts were collected at the 51 study intersections shown in **Figure 3.B-2**.[6] Counts were collected in January 2018 during the p.m. peak period (4 p.m. to 6 p.m.). In addition, a.m. peak-period (7 a.m. to 9 a.m.) counts of people driving, people bicycling, and people walking were conducted at 12 of the 51 study intersections on Van Ness Avenue and South Van Ness Avenue, which are part of U.S. 101. These include the intersection of Van Ness Avenue with Turk, McAllister, Grove, Hayes, Fell, Oak, and Market streets; Van Ness Avenue with Golden Gate Avenue; and South Van Ness Avenue with Mission/Otis, 12th, Howard, and 13th streets. All study intersections are signalized, with the exception of the intersections at Van Ness Avenue/Oak Street (no stop sign), South Van Ness Avenue/12th Street (southbound stop controlled and northbound slip lane),[7] and South Van Ness Avenue/Howard Street (one-way slip lanes in each direction). Appendix D contains figures for the vehicular traffic volumes by movement at the study intersections.

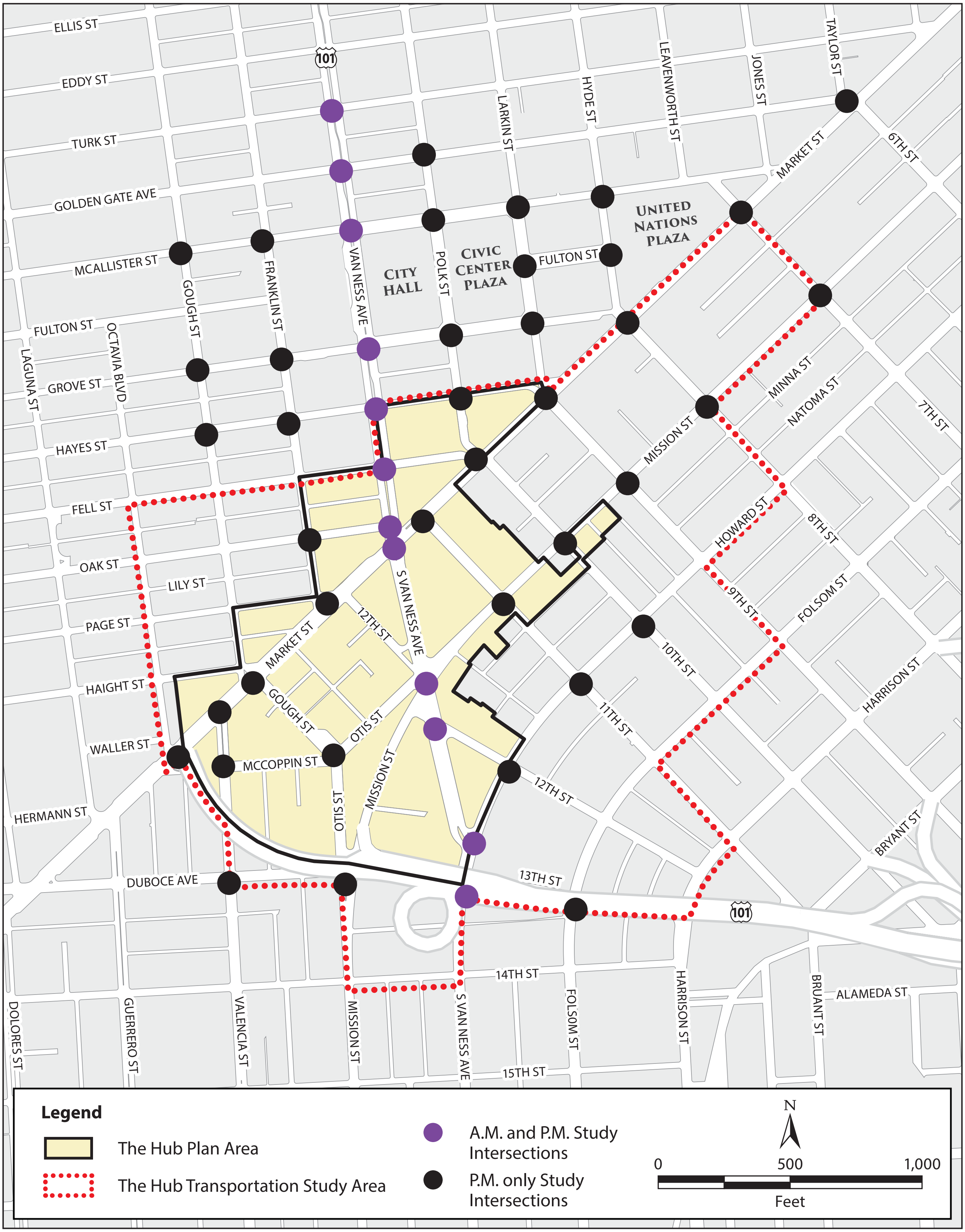
Vehicle Miles Traveled

The San Francisco County Transportation Authority's (transportation authority's) San Francisco Chained Activity Modeling Process (SF-CHAMP)[8] travel demand model was used to estimate average daily VMT per capita for different land uses in the Transportation Analysis Zone

6 Study intersections were selected to cover the sphere of influence for both the Hub Plan and adjacent Civic Center Public Realm Plan study areas. All major intersections within the two plan areas were included as well as select additional intersections within the transportation study area.

7 A slip lane is a lane at an intersection that allows vehicles to turn at the intersection without actually entering it. It is therefore not controlled by any signal at the intersection. A slip lane is typically separated from other parts of the roadway by a traffic island that is large enough to accommodate people waiting to cross the street.

8 The SF-CHAMP model is an activity-based travel demand model that has been validated to represent existing and future transportation conditions in the city. The model predicts all person travel for a full day, based on population and the total number and location of housing units and jobs, which is then allocated to different periods throughout the day using time-of-day submodels. The SF-CHAMP model predicts person travel by way of travel for automobile, transit, and non-motorized modes (e.g., walking, bicycling). The SF-CHAMP model determines vehicle trips by applying an average vehicle occupancy to the person trips by automobile. The SF-CHAMP model also provides forecasts of vehicular traffic on regional freeways, major arterials, and the transportation study area roadway network, considering the available roadway capacity, the origins and destinations of trips, and travel speeds.



Note: Study intersections were selected to cover the sphere of influence for both the Hub Plan and adjacent Civic Center Public Realm Plan study areas. All major intersections within the two plan areas were included as well as select intersections within the larger transportation study area.

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.B-2
Study Intersections

(TAZ)[9] in which the project is located. The VMT per capita ratio represents a measure of the amount and distance that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. Many factors affect travel behavior, including density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at long distances from other land uses, in areas with minimal access to non-private vehicular modes of travel, generate more automobile travel than development in urban areas with higher density, a mix of land uses, and a variety of ways of travel, other than private vehicles, are available. Given the travel behavior factors described above, San Francisco has a lower average VMT ratio than the nine-county San Francisco Bay Area region. In addition, for the same reasons, different areas of the city have different VMT ratios, and some areas of the city have lower VMT ratios than other areas of the city.

Table 3.B-1 presents existing average daily VMT per capita for residents, employees, and visitors in the nine-county San Francisco Bay Area, the Hub Plan area, and the two TAZs in which the proposed 30 Van Ness Avenue and 98 Franklin Street projects would be located, TAZs 588 and 647, respectively. As shown in **Table 3.B-1**, in the study area people drive substantially less than in the region as a whole, as demonstrated by the fact that, for the transportation study area and the two TAZs, the current average daily VMT per capita figures for the various trip types are substantially lower than the regional Bay Area averages for the nine-county San Francisco Bay Area.

TABLE 3.B-1. DAILY VMT PER CAPITA – EXISTING CONDITIONS

Trip Type (Land Use)	Bay Area Regional Average	Hub Area[a]	TAZ 647[b]	TAZ 588[c]
Households (residential)	17.2	3.1	2.5	3.5
Employment (office)	19.1	7.6	7.8	7.6
Visitors (retail)	14.9	8.6	8.1	8.3

Source: San Francisco Planning Department, *Transportation Information Map*, *http://www.sftransportationmap.org*.

[a] Average daily VMT per capita for the 15 Transportation Analysis Zones (TAZs) comprising the Hub Plan area.

[b] Average daily VMT per capita for TAZ 647, in which the proposed 30 Van Ness Avenue Project is located. TAZ 647 is bounded by Van Ness Avenue, Grove Street, Larkin Street, and Market Street.

[c] Average daily VMT per capita for TAZ 588, in which the proposed 98 Franklin Street Project is located. TAZ 588 is bounded by Van Ness Avenue, Market Street, Gough Street, and Oak Street.

[9] Transportation Analysis Zones (TAZs) are used by planners as part of transportation planning models for transportation analyses and other planning purposes. The TAZs vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas such as the Hunters Point Shipyard area.

TRANSIT SERVICE

As shown in **Figure 3.B-3,** numerous Muni bus routes and streetcar and light-rail lines serve the Hub Plan area, with most providing access between the downtown core to the east and the rest of San Francisco.

Local Muni Service

East–west bus routes north of Market Street include 5 Fulton, 5R Fulton Rapid, 7X Noriega Express, 21 Hayes, and 31 Balboa. Muni service along Market Street includes the F Market & Wharves historic streetcar line, the 6 Haight/Parnassus, and the 7 Haight/Noriega. East–west bus routes south of Market Street include the 14 Mission and 14R Mission Rapid on Mission Street, the 12 Folsom-Pacific on Folsom and Harrison streets, and 27 Bryant on Bryant and Harrison streets.

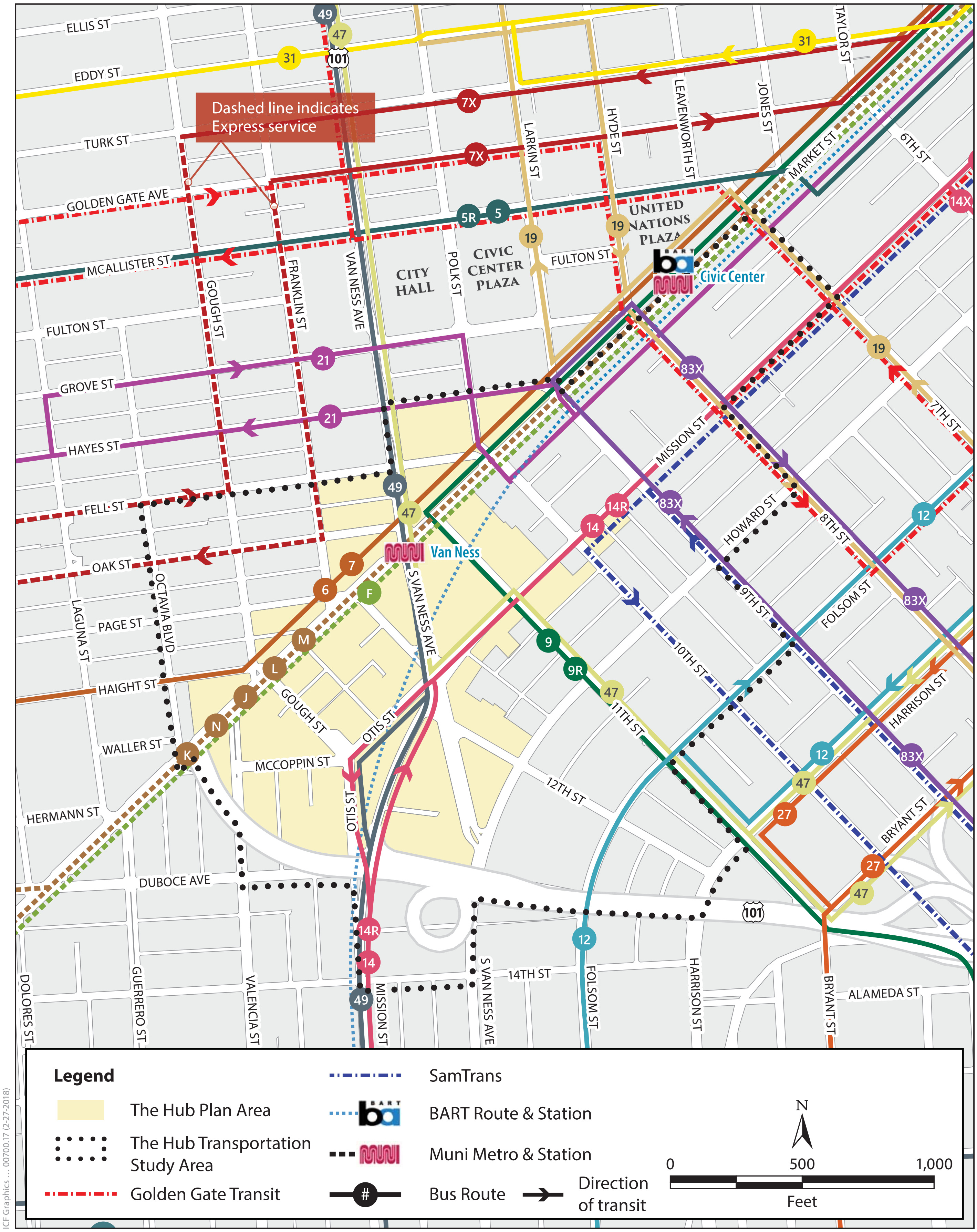
North–south bus routes include the 47 Van Ness and the 49 Van Ness-Mission that run on Van Ness and South Van Ness avenues, the 19 Polk that runs on Hyde and Eighth streets in the southbound direction and Seventh and Larkin streets in the northbound direction, and the 9 San Bruno, 9R San Bruno Rapid and the 83X Mid-Market Express that run along and south of Market Street. In addition to these surface routes, five light-rail lines (i.e., J Church, K Ingleside/T Third Street, L Taraval, M Ocean View, N Judah) operate within a subway along Market Street (i.e., the Market Street Subway). Within the transportation study area, Muni light-rail and the Bay Area Rapid Transit (BART) subway share the Civic Center station; the Van Ness station serves only Muni light-rail lines.

Construction of the Van Ness BRT Project, part of the Van Ness Improvement Project, is currently under way. Following completion of the project, the Muni 30X Marina Express, 47 Van Ness, 49 Van Ness/Mission, 76X Marin Headlands Express, and the 90 San Bruno Owl routes, as well as Golden Gate Transit 4C, 24C, 54C, 30, 70, 101 and 101X routes traveling on Van Ness Avenue north of McAllister Street, will operate within the median transit-only lanes.

During the weekday a.m. and p.m. peak periods, the aforementioned routes and lines within the transportation study area operate with headways of four to 22 minutes between transit vehicles. Five late-night bus routes also operate within the transportation study area between 1 a.m. and 5 a.m. (i.e., K Owl, L Owl, M Owl, N Owl, 90 San Bruno Owl).

Privately Operated Shuttles

There are several private shuttle services (e.g., the California Pacific Medical Center shuttles) operating on streets in the transportation study area. These services make stops within designated shuttle stops and passenger loading/unloading zones. In addition to privately operated shuttles within San Francisco, there are several commuter shuttles with service between San Francisco and the South Bay (e.g., Facebook, Google shuttles). These also operate



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.B-3
Existing Transit Network

on streets in the transportation study area. All of these shuttle services are permitted as part of the San Francisco Commuter Shuttle Program.[10] The designated shuttle stops for private shuttles are shown in **Figure 3.B-4**.

Regional Transit Service

East Bay

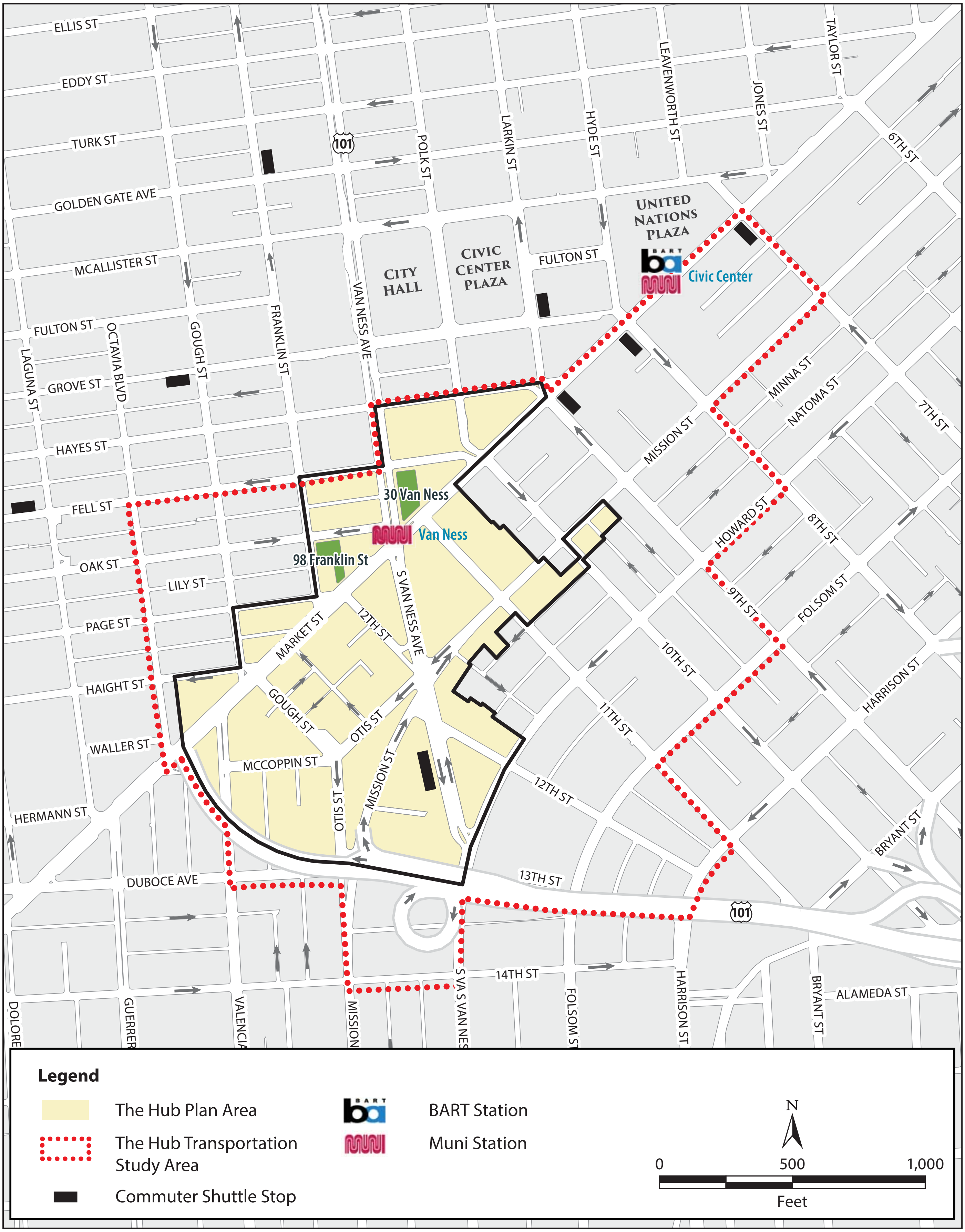
Transit service to and from the East Bay is provided by BART, AC Transit, and the Water Emergency Transportation Authority (WETA). BART operates a regional rail transit service between the East Bay (from Antioch, Richmond, Dublin/Pleasanton, and Warm Springs) and San Francisco. It also operates between San Mateo County (e.g., San Bruno, Millbrae) and San Francisco, with connections to San Francisco International Airport. In the transportation study area, the Civic Center BART station is located on Market Street between Seventh and Eighth streets. AC Transit is the primary bus operator within the East Bay, including Alameda County and the western portion of Contra Costa County. AC Transit operates 27 routes between the East Bay and San Francisco, all of which terminate at the Salesforce Transit Center. AC Transit route 800 operates within the transportation study area on South Van Ness Avenue, Valencia Street, Market Street, Mission Street and 11th Street weekdays and weekends generally between 1 a.m. and 7 a.m. This route does not operate during the midday or in the evenings. WETA ferries provide service between San Francisco and Alameda counties and between San Francisco and Oakland from the Ferry Building.

South Bay

Transit service to and from the South Bay is provided by BART, SamTrans, and Caltrain. SamTrans provides bus service between San Mateo County and San Francisco. Ten of its bus lines serve San Francisco; three routes serve the downtown area. In general, SamTrans service to downtown San Francisco operates along Bayshore Boulevard, Potrero Avenue, and Mission Street to the Salesforce Transit Center. SamTrans cannot pick up northbound passengers at San Francisco stops. Similarly, southbound passengers boarding in San Francisco (and destined for San Mateo) may not disembark in San Francisco. SamTrans routes stop at northbound and southbound bus stops on Mission Street. Caltrain provides heavy-rail commuter passenger service between Santa Clara County and San Francisco. Caltrain currently operates 44 trains each weekday, with a combination of express and local service. The closest Caltrain station is at the terminus at Fourth and King streets.

---

[10] The San Francisco Municipal Transportation Agency's (SFMTA's) Commuter Shuttle Program, approved by the SFMTA Board of Directors in November 2015, set forth new regulations pertaining to shuttle buses, which, among other requirements, restricted larger buses from smaller streets and implemented greener fleets to reduce emissions. These regulations took effect on February 1, 2016.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Source: SFMTA Commuter Shuttle Program; Chariot Commuter Transit website.

Figure 3.B-4
SFMTA Commuter Shuttle Program Stops

SamTrans route 397 operates within the transportation study area on Ninth and Tenth streets, as well as on Mission Street, South Van Ness Avenue, Market Street, and 11th Street weekdays and weekends generally between 1 a.m. and 6 a.m. This route does not operate during the midday or in the evenings.

North Bay

Transit service to and from the North Bay is provided by Golden Gate Transit buses and ferries as well as WETA ferries. Between the North Bay (Marin and Sonoma counties) and San Francisco, Golden Gate Transit operates 18 commuter bus routes, most of which serve the Van Ness Avenue corridor or the Financial District. Golden Gate Transit also operates ferry service between the North Bay and San Francisco. During the a.m. and p.m. peak periods, ferries operate between Larkspur and San Francisco and between Sausalito and San Francisco. WETA ferries provide service between Vallejo and San Francisco.

PEOPLE WALKING/ACCESSIBILITY CONDITIONS

The *Better Streets Plan* provides a basis for the design and function of all streets in San Francisco.[11] The street types in the transportation study area range from major ceremonial streets, such as Market Street, to a variety of commercial and residential streets. Recommended sidewalk widths in the *Better Streets Plan* for residential and commercial streets range from 12 to 15 feet, with a recommended 9-foot width for alleys. For downtown commercial streets, the *Better Streets Plan* defers to the *Downtown Streetscape Plan*. Minimum sidewalk width requirements range from 10 to 12 feet for most residential and commercial street types (6 feet for alleys). Existing sidewalks on streets within the transportation study area generally meet the recommended requirements of the *Better Streets Plan*. However, some alleys do not meet the recommended width of 9 feet because of narrow rights-of-way but do meet the minimum width of 6 feet. Within the transportation study area, sidewalks are provided on almost all study area streets. Signal heads and countdown signals for people walking are provided at most signalized intersections.

Counts of people walking during the p.m. peak period were conducted in January 2018 at the study intersections shown in **Figure 3.B-2**, p. 3.B-9, and at three representative sidewalk locations. **Figure 3.B-5** shows the p.m. peak-hour counts of people crossing the street at seven representative study intersections (out of the 51 intersections where counts of people walking were conducted), while **Table 3.B-2**, p. 3.B-17, presents the p.m. peak-hour counts at the three representative sidewalk locations.

---

[11] City and County of San Francisco, *Better Streets Plan*, adopted December 2010, *https://sfplanning.org/sites/default/files/archives/BetterStreets/docs/Better-Streets-Plan_Final-Adopted-10-7-2010.pdf*, accessed January 9, 2019.

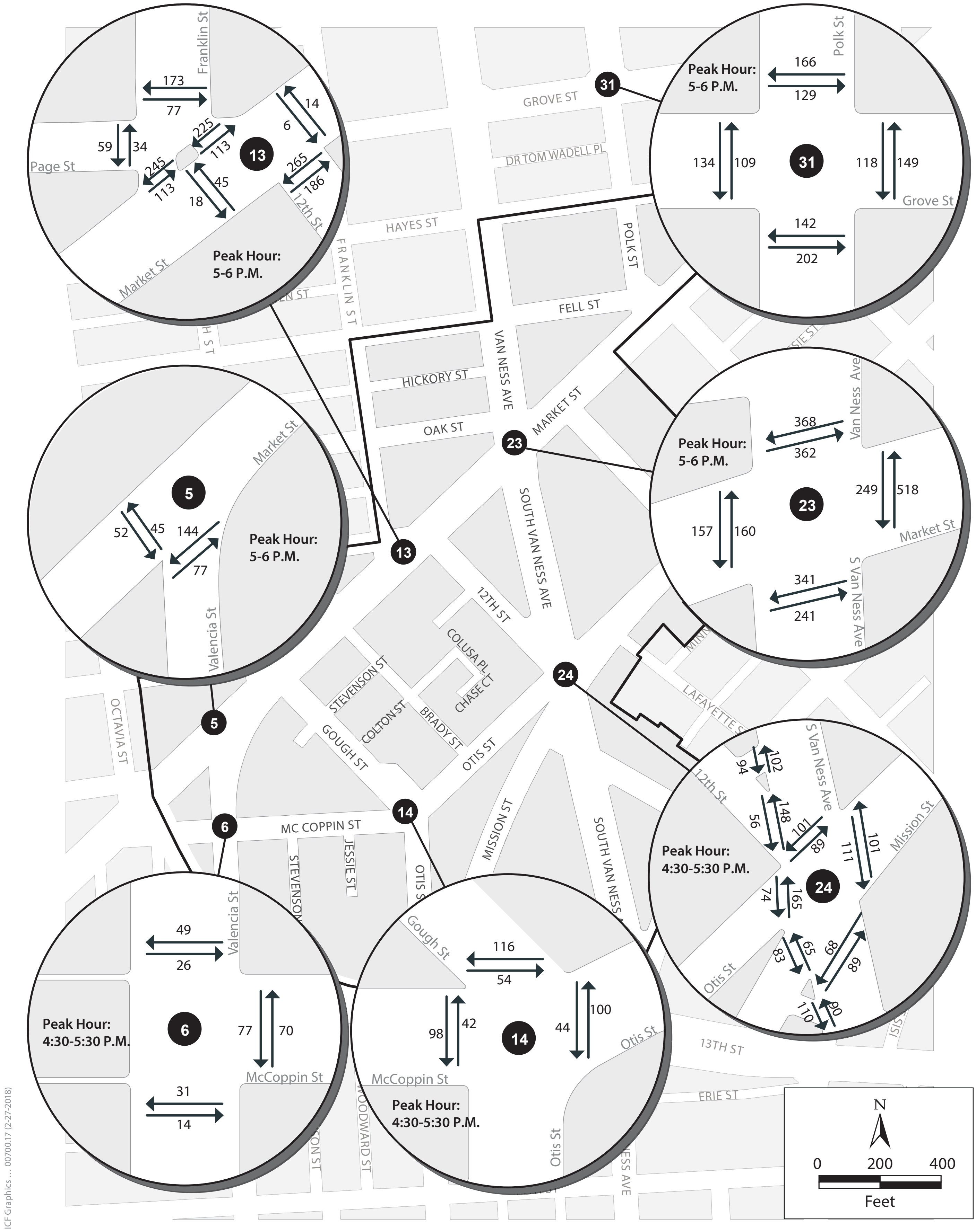


Figure 3.B-5
Existing P.M. Peak Hour Pedestrian Crossing Volumes

TABLE 3.B-2. VOLUME OF PEOPLE WALKING ON SIDEWALKS – EXISTING CONDITIONS, WEEKDAY P.M. PEAK HOUR

Sidewalk Segment/Side of the Street	People Walking on Sidewalks
Van Ness Avenue between Hayes and Fell Streets	
East	333
West	298
South Van Ness Avenue between Market and Mission/12th Streets	
East	306
West	230
Market Street between Van Ness Avenue and Franklin/12th Streets	
North	665
South	451

Source: Fehr & Peers/LCW Consulting, 2019.
Note: Counts of people walking conducted in January 2018.

As shown in **Figure 3.B-5**, p. 3.B-16, the highest number of people crossing the street during the p.m. peak hour occurs at Market Street intersections and along Van Ness Avenue, with the highest number of people crossing at the intersection of Van Ness Avenue/South Van Ness Avenue/Market Street. As presented in **Table 3.B-2**, the three representative locations where counts of people walking on sidewalks were conducted, the highest number of people walking was along Market Street, with the number approaching 660 per hour during the p.m. peak hour.

A qualitative evaluation of existing conditions for people walking was conducted during site visits to the transportation study area from January through May 2018. Facilities for people walking were noted at the study intersections, including sidewalks, crosswalks, Americans with Disabilities Act– (ADA-) compliant curb ramps, and countdown signals. In general, the basic conditions for people walking are satisfactory. During field observations, crosswalks and sidewalks were generally observed to be operating with unconstrained conditions, with normal walking speeds and freedom to bypass other people walking; however, some impediments to people walking were observed. These include the following:

- Market Street is a wide street. Because it is situated as a diagonal across two north–south street grids, most intersections have five to six approaches. Five- and six-legged intersections result in greater crossing distances for people crossing than typical four-legged intersections. At some Market Street intersections, marked crosswalks are not provided (e.g., at intersections with alleys, such as Brady Street) or only a single crosswalk is provided for an intersection (e.g., the intersection of Franklin/Market streets).

- The north crossing for people wanting to cross Franklin Street at Oak Street is closed (i.e., permanent barriers with signs direct people to cross the south leg of the intersection).
- Countdown signals for people walking are lacking at select signalized intersections within the transportation study area, including the study intersections of Van Ness Avenue/Fell Street across Van Ness Avenue and Van Ness Avenue/Hayes Street across Van Ness Avenue. The Van Ness BRT/Van Ness Improvement Project, currently under construction, will provide countdown signals for people walking at these locations.
- Although most street corners provide curb ramps within the crosswalk, several side-street approaches have curb ramps that are incorrectly positioned (e.g., located outside the bounds of the marked crosswalk, such as the northeast corner of the intersection of South Van Ness Avenue/12th Street); in some instances, curb ramps are missing. At some locations, ramps are positioned appropriately but lack yellow truncated warning domes (e.g., the intersection of 11th Street/Market Street).
- Crossing locations lack either a ramp or bi-directional ramp. These study intersections include the northeast corner at South Van Ness Avenue/12th Street (ramp faces west instead of south), southeast corner at South Van Ness Avenue/Mission Street (no ramp facing west to cross South Van Ness Avenue), northwest corner at Van Ness Avenue/Oak Street (curb faces east instead of south), northeast corner at Van Ness Avenue/Fell Street (no west-facing ramp to cross Van Ness Avenue), and northeast corner at 10th Street/Howard Street (no west-facing ramp crossing 10th Street).
- Long distances between intersections on South Van Ness Avenue between Mission and 13th streets limit crossing opportunities (including the intersection of Otis Street/South Van Ness Avenue/Mission Street).
- During peak periods, vehicles waiting to cross Market Street block crosswalks; for example, at Gough Street, people driving frequently enter the intersection at Market Street but do not make it the full distance across the intersection and block the crosswalks.
- People bicycling regularly ignoring the signal on eastbound Market Street at 12th Street; this movement has a conflicting signal for people crossing Market Street.
- Deteriorated sidewalks in places, resulting in a potential trip hazard for people walking, particularly in the area bounded by Mission Street, 11th Street, the Central Freeway, and South Van Ness Avenue.
- Narrow sidewalk on the north side of 13th Street east of South Van Ness Avenue and west of Folsom Street.

- Concrete pillar on the northwest corner of South Van Ness Avenue and 13th Street (between the southbound through lane and the right-turn slip lane) obscures visibility of people waiting to cross South Van Ness Avenue.
- Absence of daylighting[12] adjacent to some crosswalks, particularly in the area south of Market Street (e.g., at the intersections of South Van Ness Avenue/Howard Street and 12th Street/Howard Street).

Several streets within the transportation study area have been designated a Vision Zero Corridor as well as Vision Zero High-Injury Network for people walking and people bicycling. Vision Zero is a policy that assists in focusing traffic safety investments to reduce severe and fatal injuries to people walking, bicycling, and driving on streets where most severe or fatal injuries are concentrated. The City adopted Vision Zero as a policy in 2014, with the goal of zero traffic deaths for all ways people travel. Implemented projects such as Safer Market Street and ongoing projects such as the Van Ness Improvement Project are examples of City projects to address safety issues and achieve Vision Zero. Within the transportation study area, streets on the Vision Zero High-Injury Network for 2017 include Van Ness Avenue, Gough Street, Octavia Boulevard, Valencia Street, Oak Street, Market Street, Mission Street, Duboce Avenue/13th Street, 11th Street, 10th Street, and Ninth Street.

The San Francisco Municipal Transportation Agency's (SFMTA's) Traffic Engineering Division conducts an annual assessment of the collision data published by the Statewide Traffic Record System to identify locations that may need special attention and evaluate the progress of previous improvements. In November 2016, SFMTA published the *San Francisco 2012–2015 Collisions Report,*[13] which analyzed reported injury collisions between vehicles and people walking or bicycling as well as collisions with other vehicles. The report presented an analysis of collisions for the most recent 5-year period for which collision data were available and compared the results to previous annual and 5-year collision totals. The report found that, overall, within the city, non-fatal injury collisions totaled approximately 3,100 per year during the 2012–2015 period. Although the number of non-fatal injury collisions has steadily decreased since 2006, the total number of annual collisions has flattened. However, for the analysis of collisions between vehicles and people walking, since 2012, SFMTA found a decrease in the total number of annual collisions involving people walking. For the 5-year period, 10 intersections were identified as having the highest number of vehicle/people walking injury collisions (i.e., nine or more injury-reported collisions), including the intersection of Seventh Street/Market Street (nine injury collisions). In 2015 and 2016, SFMTA implemented turn

[12] Daylighting is the removal of vehicular parking near intersections and crosswalks to improve the sightline distance and visibility for people.

[13] San Francisco Municipal Transportation Agency, *San Francisco 2012–2015 Collisions Report,* November 2016, https://www.sfmta.com/reports/san-francisco-collisions-report-2012-2015, accessed January 10, 2019.

restrictions and transit-only lane extensions at the intersection of Seventh Street/Market Street as part of the Safer Market Street Project to enhance safety on Market Street between Third and Seventh streets.

BICYCLING CONDITIONS

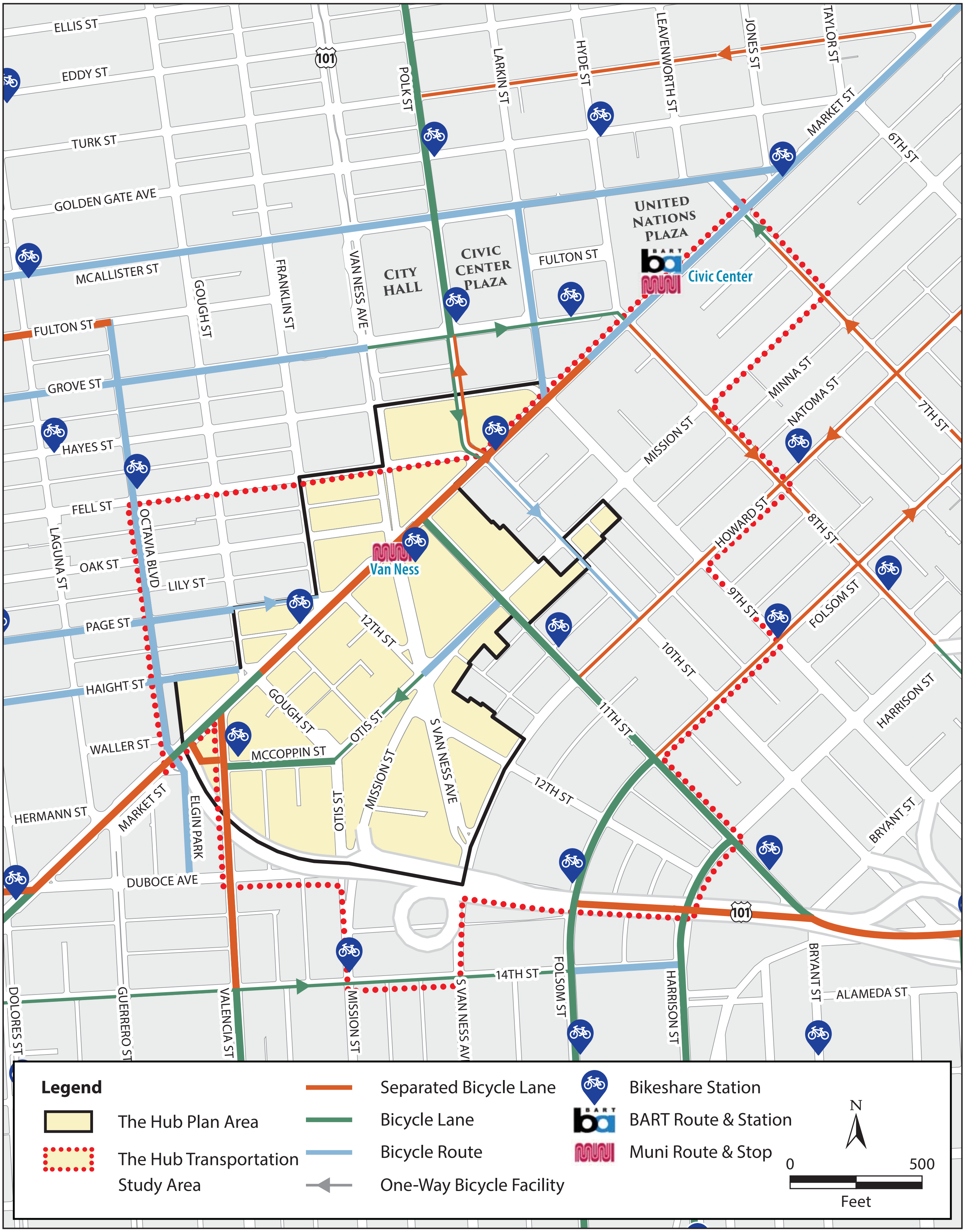
Streets in the transportation study area are generally flat, with minimal changes in grade, thereby facilitating bicycling within and through the area. The transportation study area contains several existing bicycle facilities. Bicycle facilities are typically classified as class I, class II, class III, or class IV facilities.[14] Class I bikeways are bike paths with exclusive rights-of-way for use by people bicycling or people walking. Class II bikeways are striped within the paved areas of roadways and established for the preferential use of people bicycling in separated bicycle lanes. Separated bicycle lanes provide a striped, marked, and signed lane that is buffered from vehicular traffic. These facilities, which are located on roadways, reserve 4 to 5 feet of space for bicycle traffic exclusively. Class III bikeways are signed bicycle routes that allow people bicycling to share travel lanes with vehicles and may include a shared-lane marking. A class IV bikeway is an exclusive bicycle facility that is separated from vehicular traffic by a buffer zone (also referred to as a cycle track). The separation from vehicular traffic could be by grade separations, flexible posts, inflexible physical barriers, or on-street vehicular parking. **Figure 3.B-6** presents the bicycle network in the transportation study area.

Within the transportation study area, class II bicycle lanes are provided on Polk Street (southbound), 11th Street (northbound and southbound, except northbound between Market and Mission streets), Folsom Street (eastbound, west of 11th Street), Otis Street (westbound between Van Ness Avenue and Gough Street), McCoppin Street (eastbound between Otis/Gough and Valencia streets), and Grove Street (eastbound between Van Ness Avenue and Market/Eighth streets). Class III bicycle routes are provided on 10th Street (southbound) between Market and Howard streets; Octavia Boulevard, McAllister Street, and Grove Street eastbound between Market Street and Van Ness Avenue; and west of Van Ness Avenue. Class IV separated bicycle facilities are provided on Polk Street (northbound), Eight Street (southbound), 13th Street (both directions, east of Folsom Street), Folsom Street (eastbound, east of 11th Street), Howard Street (westbound), Valencia Street (northbound and southbound), and Market Street (in both directions west of Octavia Boulevard and east of Gough Street). Between Octavia Boulevard and Gough Street, Market Street has class II bicycle lanes. On Market Street, east of Eighth Street, class III facilities are provided in each direction.

As shown in **Figure 3.B-6**, several bike-share stations are within the transportation study area, including four within the Hub Plan area. One or more class 2 bicycle racks (two bicycle parking spaces per rack) are provided on most sidewalks within the transportation study area.

---

[14] California Streets and Highway Code section 890.4.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.B-6
Existing Bicycle Route Network

Bicycle facilities in the project vicinity are well used. **Table 3.B-3** presents the existing p.m. peak-hour bicycle volumes at representative street segments within the transportation study area where bicycle lanes are provided. Bicycle volume counts were conducted during the p.m. peak period in January 2018. The peak-hour bicycle volumes range from 65 people bicycling on 13th Street to 670 people bicycling on Market Street.[15] The highest bicycle volumes during the p.m. peak hour were observed within the bicycle lanes on Market, Otis, and Valencia streets, which reflect the evening commute of people bicycling as they leave the downtown core.

As presented above in the discussion of conditions related to people walking, SFMTA conducts analyses of collisions within San Francisco to identify high-collision locations (i.e., collisions between vehicles as well as vehicle collisions involving people walking or bicycling) and implement measures to enhance safety. SFMTA's *San Francisco 2012–2015 Collisions Report* contains the latest published findings for the 2012 to 2015 period; it also assesses historical trends. The analysis of data regarding collisions between vehicles and people bicycling found that, after a steady increase in the number of annual injury collisions since 2002, injury collisions involving people bicycling dropped slightly in the period of 2013 through 2015. However, 2015 saw the highest number of severe and fatal bicycle-involved collisions since 2006. For the 2012–2015 period, nine intersections were identified as having the highest number of bicycle-involved injury collisions (i.e., eight or more injury-reported collisions). Two of the intersections are within the transportation study area: U.S. 101 ramps/Octavia Boulevard/Market Street (15 injury collisions) and Valencia Street/Market Street (eight injury collisions).

At the intersection of U.S. 101 off-ramp/Octavia Boulevard/Market Street, SFMTA implemented several enforcement, signage, signal timing, and channelization measures to improve compliance with the eastbound right-turn restriction, a key source of collisions. Although still a high-frequency collision location, there has been a decrease in the number of collisions at this location since 2011.[16] In April 2018, SFMTA implemented protected bicycle lanes west of the Hub Plan area, between Octavia Boulevard and Duboce Avenue, to enhance bicycle travel through this high-frequency collision location. At the intersection of Valencia Street/Market Street, lane striping changes were made in 2011 to reduce the likelihood of Market Street right-turn hook collisions in the eastbound direction and provide a protected left-turn bicycle treatment in the westbound direction.

---

15 Bicycle volume counts conducted in January are generally lower than other times of year when days are longer and drier.

16 San Francisco Municipal Transportation Agency, *San Francisco 2012–2015 Collisions Report*, November 2016.

TABLE 3.B-3. BICYCLE VOLUMES – EXISTING CONDITIONS, WEEKDAY P.M. PEAK HOUR

Street Segment	Type of Class II or IV Bicycle Facility[a]	P.M. Peak-Hour Bicycle Volumes[b]
Market Street between Valencia and Gough Streets		
Eastbound	bicycle lane	65
Westbound	bicycle lane	535
Market Street between 12th Street and Van Ness Avenue		
Eastbound	separated bikeway	89
Westbound	separated bikeway	531
Market Street between Polk and Larkin Streets		
Eastbound	separated bikeway	91
Westbound	separated bikeway	575
Otis Street between 12th and Gough Streets		
Westbound	bicycle lane	138
Eastbound	—	—
13th Street between Folsom and Harrison Streets		
Eastbound	separated bikeway	7
Westbound	separated bikeway	57
Valencia Street between Market and McCoppin Streets		
Northbound	separated bikeway	40
Southbound	separated bikeway	184
Polk Street between Hayes and Market Streets		
Northbound	separated bikeway	73
Southbound	bicycle lane	46
11th Street between Market and Mission Streets		
Northbound	bicycle lane	61
Southbound	bicycle lane	60

Source: Fehr & Peers/LCW Consulting, 2019.

a. Both bicycle lanes and separated bikeways are considered to be class II or class IV bikeways. A bicycle lane is a striped, marked, or signed lane for bicycle travel. A separated bikeway is a striped, marked, or signed bicycle lane that is separated from vehicular traffic.

b. Bicycle counts conducted in January 2018. The peak hour of the two-hour peak period is defined as the four consecutive 15-minute periods with the highest volume of people bicycling at a particular intersection. The peak hour may differ by intersection.

VEHICULAR PARKING CONDITIONS

Existing on-street vehicular parking conditions were examined for the streets in the parking and loading study area, which generally follows the boundaries of the Hub Plan area (see **Figure 3.B 1**, p. 3.B-2), including documentation of the existing supply of on-street general and commercial vehicular parking spaces and the locations of passenger loading/unloading zones. Occupancy surveys of on-street vehicular parking conditions were conducted in May 2018 during the midday period (i.e., between noon and 2 p.m.). In addition, during the May 2018 surveys, publicly accessible off-street vehicular parking facilities in the transportation study area were identified, and vehicular parking supply and occupancy were determined. Appendix D includes detailed summaries of the vehicular parking surveys.

On-Street Vehicular Parking Conditions

Existing on-street vehicular parking conditions were examined within the parking and loading study area. **Table 3.B-4** presents a summary of on-street vehicular parking supply for individual streets and alleys affected by the proposed streetscape and street network improvements as well as the remaining streets in the parking study area. Detailed vehicular parking supply and occupancy information is included in Appendix D.

On-street vehicular parking generally consists of metered, non-metered, and permit parking spaces, including general vehicular parking, commercial vehicular parking, passenger loading/unloading spaces, and ADA-accessible spaces. Overall, there are approximately 1,015 on-street spaces within the parking and loading study area, of which about 87 percent are vehicular parking spaces, 8 percent are commercial vehicle loading spaces, and 5 percent are passenger loading/unloading spaces. In addition, there are about 122 motorcycle parking spaces.

Table 3.B-5, p. 3.B-26, also presents a summary of vehicular parking supply and also includes midday occupancy for individual streets and alleys affected by the proposed streetscape and street network improvements as well as the remaining streets in the parking and loading study area. During the midday period, average on-street occupancy for the 880 metered and non-metered vehicular parking spaces is 96 percent. Streets where Hub Plan streetscape and street network improvements are proposed contain a total of 404 vehicular parking spaces. The overall midday occupancy for these spaces is at 92 percent.

TABLE 3.B-4. PARKING AND LOADING STUDY AREA ON-STREET VEHICULAR PARKING SUPPLY

Parking Study Area Street[a]	Vehicular Parking[d] Metered	Vehicular Parking[d] Non-metered	Vehicular Parking[d] Permit	Commercial Loading Spaces[e,f]	Passenger Zones[g] Part Time	Passenger Zones[g] Non-metered
12th Street between Market and Mission streets[b]	33	1	0	4	2	0
Gough Street between Market and Otis streets[b]	32	2	19	0	0	4
South Van Ness Avenue between Mission and 13th streets[b]	22	0	0	2	7	0
Otis Street between South Van Ness Avenue and Gough Street[b]	26	1	0	3	0	0
Otis Street between Gough Street and Duboce Avenue	19	1	5	1	0	0
Duboce Avenue between Valencia and Otis streets[b]	0	16	0	3	0	0
13th Street between Otis and Folsom streets[b]	16	66	0	2	0	0
Fell Street between Van Ness Avenue and Market Street	13	0	0	4	10	2
Franklin Street between Page and Oak streets	13	1	0	2	0	1
Oak Street between Franklin Street and Van Ness Avenue	30	1	0	4	0	4
Alleys affected by Hub Plan streetscape and street network improvements[c]	28	49	68	2	4	2
Rest of parking study area streets	313	86	19	53	4	15
Total	**545**	**224**	**111**	**80**	**27**	**28**

Source: Fehr & Peers/LCW Consulting, 2019.

a. Parking study area presented in **Figure 3.B-1**, p. 3.B-2.

b. Streets where streetscape and street network improvements are proposed as part of the Hub Plan.

c. Alleys where streetscape and street network improvements are proposed as part of the Hub Plan. These include all or a portion of Lily, Rose, Minna, Lafayette, Stevenson, Brady, Colton, Plum, and Jessie streets; Colusa Place; and Chase Court (see **Figure 2-3**, p. 2-8**)**.

d. ADA spaces included in general non-metered spaces. Permit vehicular parking includes San Francisco Department of Public Health, Federal Protection Services, SFMTA, and U.S. Marshal.

e. Does not include the recessed commercial loading bay on the north side of Market Street between Van Ness Avenue and Franklin Street.

f. After 6 p.m., the commercial loading spaces become available for general vehicular parking.

g. On-street passenger loading spaces (i.e., white curb zones) are for passenger loading/unloading activities during certain hours, with a time limit of five minutes. Passenger loading zones include part-time zones (e.g., metered vehicular parking during the day, with a passenger zone during the evening to support a restaurant) and all-day passenger zones (e.g., to support residential uses). All-day zones are non-metered, as are zones on streets without metered vehicular parking.

TABLE 3.B-5. PARKING AND LOADING STUDY AREA ON-STREET VEHICULAR PARKING SUPPLY AND MIDDAY OCCUPANCY

Parking Study Area Street[a]	Vehicular Parking Supply Spaces	Midday Occupancy Spaces	Midday Occupancy %
12th Street between Market and Mission streets[b]	34	34	100%
Gough Street between Market and Otis streets[b]	53	52	98%
South Van Ness Avenue between Mission and 13th streets[b]	22	22	100%
Otis Street between So. Van Ness Avenue and Gough Street[b]	27	27	100%
Otis Street between Gough Street and Duboce Avenue	25	24	100%
Duboce Avenue between Valencia and Otis streets[b]	16	16	100%
13th Street between Otis and Folsom streets[b]	82	73	89%
Fell Street between Van Ness Avenue and Market Street	13	13	100%
Franklin Street between Market and Oak streets	14	14	100%
Oak Street between Franklin Street and Van Ness Avenue	31	31	100%
Alleys affected by Hub Plan streetscape and street network improvements[c]	145	125	86%
Rest of parking study area streets	418	413	99%
Total	**880**	**844**	**96%**

Source: Fehr & Peers/LCW Consulting, 2019.

a. Parking study area presented in **Figure 3.B-1**, p. 3.B-2.

b. Streets where streetscape and street network improvements are proposed as part of the Hub Plan.

c. Alleys where streetscape and street network improvements are proposed as part of the Hub Plan. These include all or a portion of Lily, Rose, Minna, Lafayette, Stevenson, Brady, Colton, Plum, and Jessie streets; Colusa Place; and Chase Court (see **Figure 2-3**, p. 2-8**).**

Off-street Vehicular Parking Conditions

Existing off-street public vehicular parking facility conditions were examined within the transportation study area (see **Figure 3.B-1**, p. 3.B-2). **Table 3.B-6** summarizes off-street public vehicular parking facilities by facility type (i.e., garage or surface lot), their supply, and their midday occupancy. Within the transportation study area, there are 16 off-street public vehicular parking facilities, of which half are vehicular parking garages and half are surface lots. These vehicular parking facilities accommodate a total of 2,209 vehicles, with the majority of the vehicular parking spaces within eight garages (i.e., 1,793 spaces, or 81 percent of the 2,209 spaces). As shown in **Table 3.B-6**, during the midday period, the off-street vehicular parking facilities are well utilized, with average occupancy for the 16 facilities at 93 percent.

TABLE 3.B-6. TRANSPORTATION STUDY AREA OFF-STREET PUBLIC VEHICULAR PARKING SUPPLY AND MIDDAY OCCUPANCY

Facility[a]	Facility Type	Vehicular Parking Supply	Midday	
			Occupied	%
Fox Plaza/1390 Market Street	Garage	400	400	100%
150 Hayes Street	Garage	120	120	100%
One Polk Street	Garage	133	133	100%
1650 Mission Street	Garage	74	72	97%
1660 Mission Street	Garage	52	41	79%
1455 Market Street/55 11th Street	Garage	194	190	98%
Market Square Garage/840 Jessie Street	Garage	350	300	86%
12th Street and Kissling Garage	Garage	470	455	97%
Franklin and Oak streets, northeast corner	Surface Lot	40	36	90%
Franklin and Oak streets, southeast corner (98 Franklin Street project site)	Surface Lot	100	100	100%
15 Oak Street	Surface Lot	44	42	95%
1615 Market Street	Surface Lot	69	41	59%
23 Brady Street	Surface Lot	93	86	92%
53 Colton Street	Surface Lot	40	35	88%
Colusa Place	Surface Lot	37	15	41%
1537 Mission Street	Surface Lot	20	16	80%
Total		**2,236**	**2,082**	**93%**

Source: Fehr & Peers/LCW Consulting, 2019.

[a.] Transportation study area presented in **Figure 3.B-1**, p. 3.B-2.

In addition to these public off-street facilities within the transportation study area, there are three larger public vehicular parking facilities to the north in the Civic Center area that also have availability. These include the SFMTA Performing Arts Garage, the SFMTA Civic Center Garage, and the Opera Plaza Garage.

- The SFMTA Performing Arts Garage is located on Grove Street between Franklin and Gough streets. This garage, which serves the cultural and civic institutions in the area, contains approximately 600 vehicular parking spaces, is open Monday through Friday between 6 a.m. and midnight, and closed on Saturdays and Sundays, unless an event is scheduled.
- The SFMTA Civic Center Garage is located on McAllister Street between Polk and Hyde streets. This garage contains 845 vehicular parking spaces, is open Monday through Friday between 6 a.m. and midnight, Saturday between 8 a.m. and midnight, and Sunday between 9 a.m. and 10 p.m.

- The Opera Plaza Garage at 601 Van Ness Avenue between Golden Gate Avenue and Turk Street serves the cultural and civic institutions in the area. This garage contains about 400 public vehicular parking spaces and is open seven days a week, 24 hours a day.

Passenger and Commercial Loading Conditions

On-street Commercial Loading

As shown in **Table 3.B-4,** p. 3.B-25, there are 80 on-street commercial loading spaces within the parking and loading study area.[17] Of the 80 commercial loading spaces, 70 loading spaces (87 percent) are metered spaces, and 10 spaces (13 percent) are non-metered spaces. Metered and non-metered commercial loading spaces are reserved for loading and unloading activities during weekdays, typically 7 a.m. to 6 p.m., and generally limited to 30 minutes for commercial loading/unloading activities. After 6 p.m., the commercial loading spaces become available for general vehicular parking. Adjacent commercial loading spaces form commercial loading zones (i.e., yellow zones) in which larger trucks may use more than one stall. Commercial loading spaces are reserved for use by freight vehicles with San Francisco commercial permit stickers or similar commercial trucks. As shown in **Table 3.B-7,** the occupancy of the on-street commercial loading spaces within the parking and loading study area is 69 percent during the midday period (i.e., between 12 p.m. and 2 p.m.).

Within the Hub Plan area, there is one bulb-in[18] on Market Street. The recessed loading bay is 140 feet in length and located on the north side of Market Street, between Van Ness Avenue and Franklin Street.

On-street Passenger Loading/Unloading Zones

As shown in **Table 3.B-4,** p. 3.B-25, in addition to commercial loading spaces, there are 55 spaces designated for passenger loading/unloading activities (i.e., white zones) within the parking and loading study area.[19] Passenger loading/unloading zones provide a place to load and unload passengers for adjacent businesses and residences. These zones are intended for safe and efficient passenger drop-off and pickup and require permit renewal biennially. Passenger loading zones are reserved for five-minute passenger or material loading and unloading activities, and vehicles must be attended. Parking for more than 10 minutes is prohibited within these designated zones. Passenger loading and unloading is also permitted in commercial loading spaces as long as it is active loading/unloading and does not exceed three minutes.

---

17 The commercial vehicle loading space supply within non-metered commercial vehicle loading zones was estimated using an average of 20 feet per space. The length of metered commercial vehicle loading spaces generally varies between 18 and 24 feet in length.

18 A bulb-in refers to an on-street recessed loading bay, also known as a cut-in.

19 The passenger loading/unloading space supply within passenger loading/unloading zones was estimated using an average of 20 feet per space.

TABLE 3.B-7. PARKING AND LOADING STUDY AREA ON-STREET COMMERCIAL LOADING SUPPLY AND MIDDAY OCCUPANCY

	Loading Supply[d,e]	Midday Occupancy[f]	
Parking and Loading Study Area Street[a]	**Spaces**	**Spaces**	**%**
12th Street between Market and Mission streets[b]	4	3	75%
Gough Street between Market and Otis streets[b]	0	0	—
South Van Ness Avenue between Mission and 13th streets[b]	2	1	50%
Otis Street between South Van Ness Avenue and Gough Street[b]	3	3	100%
Otis Street between Gough Street and Duboce Avenue	1	1	100%
Duboce Avenue between Valencia and Otis streets[b]	3	1	33%
13th Street between Otis and Folsom streets[b]	2	1	50%
Fell Street between Van Ness Avenue and Market Street	4	3	75%
Franklin Street between Page and Oak streets	2	1	50%
Oak Street between Franklin Street and Van Ness Avenue	4	1	25%
Alleys affected by Hub Plan streetscape and street network improvements[c]	2	0	0%
Rest of parking and loading study area streets	53	40	75%
Total	**80**	**55**	**69%**

Source: Fehr & Peers/LCW Consulting, 2019.

a. Parking and loading study area presented in **Figure 3.B-1**, p. 3.B-2.

b. Streets where streetscape and street network improvements are proposed as part of the Hub Plan.

c. Alleys where streetscape and street network improvements are proposed as part of the Hub Plan. These include all or a portion of Lily, Rose, Minna, Lafayette, Stevenson, Brady, Colton, Plum, and Jessie streets; Colusa Place; and Chase Court (see **Figure 2-3**, p. 2-8).

d. Does not include the recessed commercial loading bay on the north side of Market Street between Van Ness Avenue and Franklin Street.

e. Includes metered and non-metered commercial loading space supply. The commercial vehicle loading space supply within non-metered loading zones was estimated using an average of 20 feet per space.

f. Midday period represents the hours between 12 p.m. and 2 p.m.

EMERGENCY ACCESS CONDITIONS

The existing roadway network within the transportation study area enables emergency vehicle access to all buildings within the transportation study area. Emergency vehicles typically use arterial roadways through the transportation study area when heading to and from an emergency and/or emergency facility. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to permit other traffic to maneuver out of the path of the emergency vehicle and yield the right-of-way.[20] Although the

[20] Per the California Vehicle Code section 21806, all vehicles must yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle has passed.

turning radius and maneuverability is somewhat restricted on some roadways, including alleyways (such as Brady, Lily, Rose, and Colton streets within the transportation study area), emergency vehicles can still access these streets and buildings.

Several San Francisco Fire Department stations serve the Hub Plan area, including Station 36, located at 109 Oak Street, between Franklin and Gough streets. Station 36 is interconnected with adjacent traffic signals at Franklin and Gough streets to facilitate emergency vehicle access from the station in both directions (i.e., to travel eastbound against traffic flow on Oak Street to Gough Street or travel eastbound on Oak Street to Franklin Street). Other nearby fire stations include Station 3 at 1067 Post Street, north of the Hub Plan area; Station 5 at 1301 Turk Street, northwest of the Hub Plan area; Station 6 at 135 Sanchez Street, southwest of the Hub Plan area; and Station 7 at 2300 Folsom Street, south of the Hub Plan area.

The transportation study area is within three police districts, the Tenderloin District (station located at 301 Eddy Street), Northern District (station located at 1125 Fillmore Street), and Southern District (station located at 1251 Third Street).

BASELINE CONDITIONS

The analysis in California Environmental Quality Act (CEQA) documents typically presents existing and existing-plus-project scenarios to identify impacts by comparing conditions with the proposed project to existing conditions. However, in the transportation study area, several transportation infrastructure projects and land use development projects are under construction or were recently completed. Some are approved and funded and therefore expected to be under construction or completed by the time the proposed project (i.e., development under the Hub Plan, including the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street) is under construction. Because of these changing conditions, a modified or future baseline, different from the existing conditions, was determined to be appropriate for the analyses prepared in this section because an analysis based on existing conditions could be misleading to decision-makers and the public.

The baseline includes land use development projects that were under construction at the time when the NOP was published. Transportation infrastructure projects that were approved and funded, and therefore likely to be completed by the time the proposed project would be under construction, were also included as part of baseline condition. This future baseline year was determined to be 2020 because it aligns with the baseline analysis year of the SF-CHAMP model used in the transportation analysis. The projects included in the 2020 baseline condition will implement various transportation network changes. These include travel-lane reductions, new bicycle lanes, safety projects, streetscape projects that have been recently implemented (e.g., Upper Market Street Safety Project, Safer Market Street Project, signal timing changes on Market and Mission streets, which were completed prior to 2018), transportation projects that have been approved and funded or are under construction (e.g., Van Ness BRT/Van Ness Improvement

Project, Polk Street Streetscape Project), and land use development projects that will likely be completed by the 2020 baseline year (e.g., 1546–1564 Market Street Project, 1629 Market Street Project, 1699 Market Street Project, 1500 Mission Street Project, 150 Van Ness Avenue Project, and 22–24 Franklin Street Project).

The Safer Market Street Project focused on the section of Market Street between Third and Eighth streets and included turn restrictions, an extension of transit-only lanes, corner sidewalk extensions, daylighting, continental crosswalks, as well as other measures to enhance visibility for people walking, bicycling, and driving at intersections. Signal timing changes on Market and Mission streets within the transportation study area included changes to the signal cycle duration from 60 to 90 seconds, the addition of protected phases, and the provision of leading intervals at many intersections for people walking.

The Upper Market Street Safety Project included changes to the corridor's complex six-legged intersections, dedicated bike lane upgrades, and public realm improvements to enhance safety and comfort for people walking, bicycling, and driving.

The Van Ness BRT/Improvement Project will provide two travel lanes on Van Ness Avenue in each direction, separated by median transit-only lanes. Left turns from Van Ness Avenue will be limited to a few locations north of the transportation study area. Operational improvements will include adjusting traffic signals to give buses more green-light time at intersections and providing real-time bus arrival and departure information for passengers to allow them to manage their time more efficiently. Following completion of construction, bus service will be relocated to the median transit-only lanes, and the existing curbside bus stops will be discontinued.

The Polk Street Streetscape Project includes streetscape and safety improvements on the section of Polk Street between Union and McAllister streets. Safety improvements include leading intervals for people walking, daylighting at signalized and stop-controlled intersections, loading zone improvements, new accessible vehicular parking spaces, new shared lane markings, and new turn lanes.

The quantitative analyses of travel demand and transit travel times incorporate the baseline projects. In addition, 2020 baseline conditions consider the increases in transit, as well as the number of vehicles, people walking, and people bicycling, that are anticipated to occur as a result of growth by 2020, as projected by SF-CHAMP, including, but not limited to, the land use development projects that are likely to be completed by 2020, as mentioned above. Additional information on the use of the travel demand and transit operation models is provided in Appendix D.

REGULATORY FRAMEWORK

This section summarizes the plans and policies of the city and regional and state agencies that have policy and regulatory control within the Hub Plan area. There are no federal regulations that pertain to transportation impacts associated with the Hub Plan or the two individual development projects.

STATE REGULATIONS

CEQA SECTION 21099(B)(1) (SENATE BILL 743)

CEQA section 21099(b)(1) requires the Office of Planning and Research to develop revisions to the CEQA Guidelines, thereby establishing criteria for determining the significance of transportation impacts from projects that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts, pursuant to section 21099(b)(1), automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity, or vehicular traffic congestion shall not be considered a significant impact on the environment under CEQA.

In January 2016, the Office of Planning and Research published for public review and comment its *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743* (proposed transportation impact guidelines), recommending that project transportation impacts be measured using a VMT metric.[21] In January 2019, changes to the CEQA statutes and guidelines went into effect, including a new section 15064.3 that states that vehicle miles traveled is the most appropriate measure of transportation impacts, and includes updated criteria for analyzing transportation impacts.

CALTRANS CONSTRUCTION MANUAL

The California Department of Transportation (Caltrans) *Construction Manual* contains policies and procedures for construction personnel and construction contract administrators to follow when working on the State Highway System. The manual also identifies procedures for projects administered by a local agency that modify, maintain, or improve the State Highway System (e.g., construction within South Van Ness Avenue) so that construction is conducted efficiently and effectively. It requires local agencies to conform to Caltrans standards and practices, as defined in the manuals and guidance documents pertaining to policies and practices.

---

[21] Office of Planning and Research, *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013),* January 20, 2016.

Regional Regulations

Plan Bay Area

Plan Bay Area 2040 is a state-mandated, integrated long-range transportation and land use plan. As required by Senate Bill 375, all metropolitan regions in California must complete a Sustainable Communities Strategy as part of a Regional Transportation Plan. This strategy integrates transportation, land use, and housing to meet greenhouse gas reduction targets set by the California Air Resources Board. The Hub Plan meets those requirements. In addition, the Hub Plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The Hub Plan neither funds specific transportation projects nor changes local land use policies.

In the Bay Area, the Metropolitan Transportation Commission and the Association of Bay Area Governments adopted the latest plan in 2017. To meet the greenhouse gas reduction targets, the Hub Plan identifies priority development areas. The agencies estimate approximately 77 percent of housing and 55 percent of job growth will occur in the Bay Area between 2010 and 2040. The project is located in Market-Octavia/Upper Market priority development area.

Local Regulations, Plans, and Policies

Transit First Policy

In 1999, San Francisco voters amended the City Charter (article 8A, section 8A.115) to include the Transit First Policy, which was first articulated as a City priority policy by the board of supervisors in 1973. The Transit First Policy is a set of principles that underscore the City's commitment to have travel by transit, bicycle, and foot be given priority over use of the private automobile. These principles are embodied in the policies and objectives of the transportation element of the San Francisco General Plan. All City boards, commissions, and departments are required, by law, to implement the Transit First Policy's principles in conducting city affairs.

Vision Zero Policy

In 2014, the San Francisco Board of Supervisors adopted a resolution to implement an action plan to reduce traffic facilities to zero by 2024 through engineering, education, and enforcement (resolution 91-14). Numerous San Francisco agencies responsible for the aforementioned aspects of the action plans adopted similar resolutions. In 2017, the board of supervisors amended the Transportation and Urban Design elements of the General Plan to implement Vision Zero (ordinance 175-17).

San Francisco General Plan

The transportation element of the San Francisco General Plan is composed of objectives and policies that relate to eight aspects of the citywide transportation system: general regional transportation, congestion management, vehicle circulation, transit, people walking, bicycles, citywide vehicular parking, and goods management. The transportation element, which references San Francisco's Transit First Policy in its introduction, contains objectives and policies that are directly pertinent to consideration of the proposed project, including objectives related to encouraging transit use and changing signal timing to emphasize the role of transit, people walking, and people bicycling as parts of a balanced multimodal transportation system.

The San Francisco General Plan also includes the Market and Octavia Area Plan, which provides objectives and policies to guide land use development, to enhance urban space and urban form, and to improve the transportation network for all ways of travel.

SAN FRANCISCO REGULATIONS FOR WORKING IN SAN FRANCISCO STREETS

The San Francisco Regulations for Working in San Francisco Streets (SFMTA Blue Book), prepared and regularly updated by SFMTA under authority derived from the San Francisco Transportation Code, serves as a guide for contractors working in San Francisco streets. The manual establishes rules and guidance so that work can be done safely and with the least possible interference with people walking and bicycling, transit, and vehicular traffic. The manual also contains relevant general information, contact information, and procedures related to working in the public right-of-way when controlled by agencies other than SFMTA.

In addition to the regulations presented in the manual, all construction-related traffic control, warning, and guidance devices must conform to the *California Manual on Uniform Traffic Control Devices*. Furthermore, contractors are responsible for complying with all applicable city, state, and federal codes, rules, and regulations. The party responsible for setting up traffic controls during construction shall be held accountable and responsible if such controls do not meet the guidance and requirements established by the manual and any applicable state requirements.

PLANNING COMMISSION RESOLUTION 19579

In March 2016, the Planning Commission unanimously approved a resolution for adopting changes consistent with implementation of Senate Bill 743, as described above under CEQA section 21099(b)(1), including use of VMT as the metric for calculating transportation-related environmental impacts.

TRANSPORTATION SUSTAINABILITY FEE

The planning code requires certain new development projects to pay an updated fee, based on the size of the development, to the City (section 411A). The fee offsets a portion of the development projects' impacts on the transportation system. The City may use the fee only toward specific programs consisting of transit capital maintenance, local and regional transit service expansion and reliability, complete streets, and program administration.

Transportation Demand Management Program

The planning code requires certain new development projects to incorporate "design features, incentives, and tools" to reduce VMT (section 169). Development projects must choose measures from a menu of options to develop an overall transportation demand management (TDM) plan. Some options overlap with requirements elsewhere in the planning code (e.g., bicycle parking, car-share parking). Each development project's TDM plan requires routine monitoring and reporting to the San Francisco Planning Department (department) to demonstrate compliance.

Better Streets Plan, Policy, and Requirements

In 2006, the San Francisco Board of Supervisors adopted the Better Streets Policy. Since then, the board has amended the policy several times, including in 2010 to reference the *Better Streets Plan*. The *Better Streets Plan* creates a unified set of standards, guidelines, and implementation strategies to govern how San Francisco designs, builds, and maintains its pedestrian environment. The planning code requires certain new development projects to make changes to the public right-of-way, such that it is consistent with the *Better Streets Plan* (section 138.1). The planning code requires most projects to plant and maintain street trees and some, larger projects to submit a streetscape plan that may require elements such as sidewalk widening, transit boarding islands, and medians.

Off-street Loading

The planning code requires certain new development projects to include off-street freight loading spaces (section 152.1). The planning code requirements for spaces depends on the size of the development projects. The planning requires certain dimensions of the spaces and allows for substituted service vehicle spaces (section 154(b)).

Impacts and Mitigation Measures

This section describes the impact analysis related to transportation and circulation for the Hub Plan and the individual development projects. It also describes the methods used to determine the impacts of the Hub Plan and the individual development projects, and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

Implementation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations but would not require additional CEQA analysis. Because the Hub HSD would be a procedural change that would be shown as an overlay on zoning maps, no impacts would result from implementation of the HSD beyond those identified for the Hub Plan, and this project component is not discussed further.

SIGNIFICANCE CRITERIA

The criteria for determining the significance of impacts in this analysis are consistent with the environmental checklist in Appendix G of the CEQA Guidelines, as modified by the department.

For the purpose of this analysis, the bullet points below were used to determine whether implementing the Hub Plan and individual development projects would result in a significant impact on transportation and circulation. Implementation of the Hub Plan and individual development projects would have a significant effect on transportation and circulation if the project 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; or
- Result in inadequate emergency access.

The department uses significance criteria to facilitate the transportation analysis and address the Appendix G checklist.. The criteria are as follows:

- **Vehicle Miles Traveled**
  - The project would have a significant effect on the environment if it would cause substantial additional VMT.
  - The project would have a significant effect on the environment if it would substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network.
- **Driving Hazards.** The project would have a significant effect on the environment if it would create potentially hazardous conditions for people driving.
- **Transit.** The project would have a significant effect on the environment if it would substantially delay transit or create potentially hazardous conditions for transit operators.

- **Walking/Accessibility.** The project would have a significant effect on the environment if it would create potentially hazardous conditions for people walking or interfere with accessibility for people walking to and from the project site and adjoining areas.
- **Bicycling.** The project would have a significant effect on the environment if it would create potentially hazardous conditions for people bicycling or interfere with accessibility for people bicycling to and from the project site and adjoining areas.
- **Loading.** The project would have a significant effect on the environment if it would result in a loading deficit and secondary effects that would create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay transit.
- **Vehicular Parking.** A project would have a significant effect on the environment if it would result in a substantial vehicular parking deficit and secondary effects that would create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or people bicycling; result in inadequate access for emergency vehicles; or substantially delay public transit.
- **Emergency Access**. A project would have a significant effect on the environment if it would result in inadequate emergency access.
- **Construction.** Construction of the project would have a significant effect on the environment if, in consideration of the setting, the project's temporary construction activities would require a substantially extended duration or intense activity, and the effects would create potentially hazardous conditions for people walking, bicycling, or driving or riding transit; substantially interfere with emergency access or accessibility for people walking or people bicycling; or substantially delay public transit.

Approach to Analysis

This section describes the methodology for analyzing transportation impacts and discusses the information considered in developing the travel demand forecasts used in the analyses for the Hub Plan and individual development projects. The impacts of the Hub Plan and individual development projects on the surrounding transportation network were analyzed using the Transportation Impact Analysis Guidelines updated in 2019[22] and Planning Commission resolution 19579, which provide direction for analyzing transportation conditions and identifying the transportation impacts of a proposed project.

The effects of the proposed rezoning within the Hub Plan are analyzed in this EIR at a programmatic level; the proposed streetscape and street network improvements under the Hub Plan and the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street are analyzed at a project level.

---

[22] San Francisco Planning Department, *Transportation Impact Analysis Guidelines,* February 2019. Available online at *https://sfplanning.org/news/transportation-impact-analysis-guidelines-update*

Analysis Scenarios and Periods

The analysis of the Hub Plan and two individual development projects was conducted for 2020 baseline-plus-project and 2040 cumulative conditions. The 2020 baseline-plus-project condition assesses the near-term impacts of the Hub Plan and two individual development projects and is considered to be the CEQA baseline for purposes of transportation and circulation analysis, while the 2040 cumulative condition assesses the long-term impacts of the Hub Plan and two individual development projects in combination with other reasonably foreseeable development. The year 2020 was selected for the near-term impact analysis because it represents the nearest baseline year for which travel demand forecasts are available. The year 2040 was selected as the future analysis year because 2040 is the latest year for which future travel demand forecasts are available from the San Francisco County Transportation Authority's travel demand forecasting model.

Per the 2019 Transportation Impact Analysis Guidelines, the weekday p.m. peak hour is the standard analysis period for projects in San Francisco and therefore was analyzed for the Hub Plan and two individual development projects.

Construction Impacts Methodology

Potential short-term construction impacts were assessed qualitatively, based on preliminary construction information for the individual development projects at 30 Van Ness Avenue and 98 Franklin Street and general construction-related information for activities associated with other development projects and streetscape and street network improvements on sidewalks, in bicycle lanes, and/or in travel lanes in the Hub Plan area. The construction impact evaluation addresses issues related to the staging and duration of construction activities as well as roadway and/or sidewalk closures. It also evaluates the effects of construction activities on transit facilities and service, bicycle circulation, travel lanes, and people walking.

VMT Analysis Methodology

Land Use Components

Area Plans. The analysis of VMT impacts for area plans compares the VMT per capita for conditions without and with implementation of the Hub Plan. If the VMT per capita with implementation of the Hub Plan are equal to or less than the VMT per capita for the Hub Plan area and the region based on the latest Sustainable Communities Strategy, then implementation of the area plan would not result in a significant VMT impact.

The analysis of VMT impacts considered VMT per capita with and without implementation of the Hub Plan, based on output from the SF-CHAMP model analyses conducted for the Hub Plan (a description of the SF-CHAMP model analyses is presented below under Project

Travel Demand Analysis, starting on p. 3.B-47). Consistency with the Sustainable Communities Strategy was determined based on the analysis conducted by the Metropolitan Transportation Commission for Plan Bay Area 2040, which is the region's Sustainable Communities Strategy.[23]

Development Projects. The department uses the following quantitative thresholds of significance to determine whether the project would generate substantial additional VMT:

- For residential projects, if it exceeds the regional household VMT per capita minus 15 percent.
- For office projects, if it exceeds the regional VMT per employee minus 15 percent.
- For retail projects, if it exceeds the regional VMT per employee minus 15 percent.[24]
- For mixed-use projects, each land use is evaluated independently, per the thresholds of significance described above.

The department uses VMT efficiency metrics (per capita or per employee) for thresholds of significance. VMT per capita reductions mean that individuals will, on average, travel less by automobile than previously, but, because the population will continue to grow, there may not be an overall reduction in the absolute number of miles driven.

As recommended by the Office of Planning and Research and included in the Planning Commission resolution that adopted the VMT metric and the thresholds of significance for transportation impact analysis in San Francisco[25], the department uses a map-based screening criterion to identify types and locations of land use projects that would not exceed these quantitative thresholds of significance. The San Francisco County Transportation Authority uses a model to present VMT for residential, office, and retail in San Francisco and the region, as described and shown under existing conditions. The department uses that data and associated maps to determine whether a project site's location is below the VMT quantitative threshold of significance. If a project is located in an area that has a low VMT, and it incorporates similar features to other developments in that area (i.e., density, mix of uses, transit accessibility), then

---

[23] Metropolitan Transportation Commission, *Plan Bay Area 2040 Draft EIR*, SCH #2016.052041, April 2017; Final EIR, July 2017; Addendum to the Final EIR, March 2018, *https://www.planbayarea.org/2040-plan/environmental-impact-report*.

[24] Retail travel is not explicitly captured in the SF-CHAMP modeling process, rather, there is a generic "other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other non-work, non-school tours. The retail efficiency metric captures all of the "other" purpose travel generated by Bay Area households. The denominator of employment (including retail; cultural, institutional, and educational; and medical employment; and number of households) represents the size, or attraction, of the zone for this type of "other" purpose travel.

[25] San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A*, March 3, 2016.

the project can be presumed to not have a VMT impact. Furthermore, also as recommended by Office of Planning and Research, as part of the City methodology and approach stated in the Planning Commission resolution, the department presumes residential, retail, and office projects, and projects that are a mix of these uses, proposed within 0.5 mile of an existing major transit stop (as defined by CEQA section 21064.3) or an existing stop along a high-quality transit corridor (as defined by CEQA section 21155) would not exceed these quantitative thresholds of significance. However, this presumption would not apply if the project would: (1) have a floor area ratio of less than 0.75; (2) include more parking for use by residents, customers, or employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.[26]

The department applies the map-based and proximity to transit station screening criteria to the following land use types:

- Tourist Hotels, Student Housing, Single-Room-Occupancy Hotels, and Group Housing. Trips associated with these land uses typically function similarly to residential. Therefore, these land uses are treated as residential for screening and analysis.
- Childcare, K-12 Schools, Post-Secondary Institutional, Medical, and Production, Distribution, and Repair. Trips associated with these land uses typically function similarly to office. Although some of these uses may have some visitor/customer trips associated with them (e.g., childcare drop-off trips), those trips are often a side trip within a larger tour. For example, visitor/customer trips are influenced by the origin (e.g., home) and/or ultimate destination (e.g., work) of those tours. Therefore, these land uses are treated as office for screening and analysis.
- Grocery Stores, Local-Serving Entertainment Venues, Religious Institutions, Parks, and Athletic Clubs. Trips associated with these land uses typically function similar to retail. Therefore, they are treated as retail for screening and analysis.

Transportation Components

The department uses the following quantitative threshold of significance and screening criteria to determine whether transportation projects may substantially induce additional automobile travel: 2,075,220 VMT per year. This threshold is based on the fair-share VMT allocated to transportation projects required to achieve California's long-term greenhouse gas emissions reduction goal of 40 percent below 1990 levels by 2030.[27]

---

[26] The department considers a project to be inconsistent with the Sustainable Communities Strategy if the project is located outside of areas contemplated for development in the Sustainable Communities Strategy.

[27] San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A*, March 3, 2016, p.13.

The department uses a list of transportation components that would not exceed this quantitative threshold of significance. If a project fits within the general types of projects (including combinations of types) listed below, then the department presumes that VMT impacts would be less than significant:

- Active Transportation, Rightsizing (aka Road Diet), and Transit Projects:
  - Reduction in the number of through lanes.
  - Infrastructure projects, including safety and accessibility improvements, for people walking and bicycling.
  - Installation or reconfiguration of vehicular traffic calming devices.
  - Creation of new or conversion of existing mixed-flow travel lanes (including vehicle ramps) to transit-only lanes.
- Other Minor Transportation Projects:
  - Rehabilitation, maintenance, replacement, and repair projects designed to improve the condition of existing transportation assets (e.g., highways, roadways, bridges, culverts, tunnels, transit systems, facilities for people walking or bicycling) and not add additional motor vehicle capacity.
  - Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left-, right-, and U-turn pockets or emergency breakdown lanes that are not used as through lanes.
  - Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority features.
  - Conversion of existing general purpose lanes (including vehicle ramps) to managed lanes (e.g., high-occupancy vehicle, high-occupancy toll, or truck lanes).
  - Timing of signals to optimize the flow of vehicles and people walking or bicycling on local or collector streets.
  - Addition of transportation wayfinding signage.
  - Conversion of streets from one-way to two-way operations, with no net increase in the number of vehicle travel lanes.
  - Removal of off-street or on-street vehicular parking spaces.
  - Adoption, removal, or modification of on-street vehicular parking or loading restrictions, including meters, time limits, accessible spaces, and referential/reserved vehicular parking permit programs.

Driving Hazards Analysis Methodology

In assessing driving hazards, the Hub Plan's and individual development project's changes to the transportation network were reviewed to determine whether they would obstruct, hinder, or impair reasonable and safe views by drivers traveling on the same street or restrict the ability of a driver to stop the motor vehicle short of a collision.

Transit Analysis Methodology

The department uses a quantitative threshold of significance and qualitative criteria to determine whether subsequent development under the Hub Plan would substantially delay transit.[28] For individual Muni routes with headways less than eight minutes, the department may use a threshold of significance less than four minutes. For individual surface lines operated by regional agencies, if the project would result in transit delay greater than one-half headway, then it might result in a significant impact. The department considers the following qualitative criteria for determining whether that delay would result in significant impacts due to a substantial number of people riding transit switching to riding in private or for-hire vehicles: transit service headways and ridership, origins and destinations of trips, availability of other transit and ways of travel, and competitiveness with private vehicles.

The department has determined that a project that generates fewer than 300 inbound vehicle trips during the peak hour would not result in a delay to transit. If the proposed project would generate more than 300 inbound vehicle trips, then a quantitative transit operations analysis would be prepared to determine whether implementation of the project would increase transit travel times and substantially delay transit. These additional vehicle trips would affect only surface transit operations (e.g., buses, historic streetcars, light-rail vehicles operating at grade) near the project site and would not affect Muni Metro subway, BART, or WETA ferry operations. Therefore, only impacts on surface transit operations are considered.

Impacts of subsequent development under the Hub Plan on transit operations were measured in terms of increases to transit travel times. Weekday p.m. peak-hour transit travel times were estimated for bus routes that travel in mixed-flow travel lanes for more than two blocks within or adjacent to the Hub Plan area under three analysis scenarios: 2020 baseline, 2020 baseline-plus-project, and 2040 cumulative conditions. These routes consist of Muni 5 Fulton, 5R Fulton Rapid, 9 San Bruno, 9R San Bruno Rapid, 14 Mission, 14R Mission Rapid, 19 Polk, and 21 Hayes. The analysis segments include all stops for these routes within the transportation study area.

---

[28] Per the 2019 Transportation Impact Analysis Guidelines, transit capacity is no longer considered in assessing the environmental impacts of a project on local or regional public transit operations, consistent with state guidance that calls for not treating the addition of new users as an adverse impact and reflecting funding sources and policies that encourage additional ridership.

The transit travel time analysis was conducted using the Transit Cooperative Research Program (TCRP) *Report 165: Transit Capacity and Quality of Service Manual* methodology presented in Chapter 6, Bus Transit Capacity, of the report.[29] The analysis used the TCRP spreadsheet tool provided as part of TCRP Report 165. The transit travel time methodology includes several steps, depending on the type of bus operations and the availability of data. The application of this methodology to the analysis involved three sequential steps:

- Step 1: Dwell Time at Stops
- Step 2: Bus Stop Capacity
- Step 3: Bus Travel Time

The outputs from the third step were used to determine transit travel times along each study segment for each individual route by direction of travel.

- **Step 1: Dwell Time at Stops** – This calculation estimates the average dwell time (the time when a bus is stopped to load and unload passengers at a transit stop) at each stop, based on passenger boardings and alightings,[30] fare collection methods, and transit vehicle characteristics. Passenger boardings and alightings at the stop level were calculated from the data in the most recent SFMTA Passenger Activity Report (fall 2015) to provide an existing baseline. Future 2020 and 2040 boardings and alightings for each stop and route were calculated by multiplying the existing baseline by the overall percentage increase in transit ridership in the transportation study area under each scenario, as derived from the SF-CHAMP model runs.[31]

  The dwell time calculations assume all-door boarding, level boarding, and a "smart card" as the most common payment type, with approximately 10 percent of passengers who board using the fare box.[32] Standees were assumed to be on board transit vehicles traveling in the peak direction (during the weekday p.m. peak hour, the peak direction of travel is outbound from downtown) but not in the non-peak direction. The number of doors was based on the vehicle types listed in the SFMTA Bus Fleet Management Plan, 2017–2030 (Appendix D).[33] The TCRP Report 165 default door opening and closing time of four seconds was used. The number of loading areas, defined as the number of buses that can load at a stop simultaneously, was identified for each stop.

---

[29] Transportation Research Board, *TCRP Report 165: Transit Capacity and Quality of Service Manual,* third edition, 2013, *http://www.trb.org/Main/Blurbs/169437.aspx*.

[30] Passenger boardings and alightings refer to passengers getting on and off a bus, respectively.

[31] San Francisco County Transportation Authority, July 2018.

[32] SFMTA, *All-Door Boarding Evaluation, Final Report*, December 2014, Table 1: Principal Findings (see table in Appendix B).

[33] SFMTA, Fleet Management Plan.

- **Step 2: Bus Stop Capacity** – This calculation estimates the capacity of each individual stop in terms of number of buses per hour that can be served and considers delay due to vehicular traffic congestion as well as re-entry delay. The overall capacity of a particular route segment is then determined using the capacity of the stop with the lowest capacity. Intersection vehicular traffic volumes and traffic signal timing data are used as inputs to provide estimates of vehicular traffic congestion delays and traffic signal delays. Vehicular traffic volume inputs were obtained from the SF-CHAMP model runs conducted for the Hub Plan.[34] The signal timing inputs are based on current signal timing data, where applicable, and information about future timing changes provided by SFMTA. Specifically, the SFMTA has indicated that, as of 2020–2021, all intersections north of Market Street will have 75-second cycle lengths, all intersections south of Market Street will have 90-second cycle lengths, and nearly all signalized crossings for people walking will have 4-second leading intervals for people walking.[35,36] Other inputs into the bus stop capacity calculation include the signal cycle length, green-per-cycle (g/c) ratio, and interaction of people walking and vehicles.

  Bus stops were identified as being off-line or online[37] and far-sided or near-sided.[38] All stops were assumed to operate with random arrival patterns (not platooned), with linear transit loading areas (not sawtooth)[39] and coded as being in a metropolitan central business district. The bus lane type adjacent to each stop was identified using TCRP Report 165 definitions.[40] The TCRP Report 165 default values for the coefficient of variation for dwell times (0.60) and failure rate[41] (15 percent) were used.

---

34 *Technical Memorandum – The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR – Estimation of Project Travel Demand*, January 2019 (see Appendix D).

35 Email from James Shahamiri of SFMTA, dated August 16, 2018.

36 A leading interval for people walking is a signal phase at signalized intersections that typically gives people walking a three- to five-second head start when entering an intersection with a corresponding green signal in the same direction of travel. For drivers, the leading intervals for people walking make it easier to see people walking in the intersection and reinforces their right-of-way over turning vehicles.

37 Off-line bus stops require the bus to leave the travel lane in which it was traveling, be it a transit-only lane or mixed-flow lane, to pick up and drop off passengers. Bus stops located in the vehicle parking lane are examples of an offline stop. Online stops allow a bus to stop within the travel lane in which it was traveling to pick up and drop off passengers. Stops at transit boarding islands are considered online stops.

38 Far-side transit stops are stops located at the second or farthest side of the intersection after a transit vehicle passes through the intersection. Near-side stops are stops located at the first or nearest side of the intersection before a transit vehicle passes through the intersection.

39 Linear loading areas are positioned along a curb parallel to the travel lanes while sawtooth loading areas are positioned at a 45-degree angle to the travel lanes. Sawtooth loading areas are by definition off line while linear loading areas can be either on line or off line.

40 Type 1 = buses have no use of the adjacent lane; Type 2 = buses may move into the adjacent lane, traffic permitting; Type 3 = buses have full use of adjacent lane.

41 Failure rate is the percentage of buses that arrive at the bus stop to find all available loading areas already occupied.

- **Step 3: Bus Travel Time** – This calculation estimates average bus speed for a route segment by direction, then converts it to bus travel time. The calculation uses the dwell time and capacity information from steps 1 and 2 as inputs as well as additional data on route operations, such as the frequency of buses per hour,[42] number of bus stops per mile, traffic signal pattern,[43] and bus running speed (20 mph).[44] The TCRP Report 165 default bus acceleration rate of 3.4 feet/second^2 and deceleration rate of 4.0 feet/second^2 were used.

Subsequent development under the Hub Plan would have a significant impact if it would increase existing transit travel times during the peak hour on a route so that additional transit vehicles would be required to maintain the existing or planned headways. This was assumed to be the case if a subsequent development's increase in travel time on a particular route in a particular direction would be greater than or equal to four minutes, or half of the route headway, whichever is less, as determined by SFMTA's 2030 Fleet Plan for future headways (see Appendix D). If it was determined that subsequent development under the Hub Plan would have a significant project-specific travel-time impact under baseline-plus-project conditions and significant cumulative impacts were identified, then subsequent development under the Hub Plan would also contribute substantially to significant cumulative impacts.

A qualitative assessment was conducted to determine whether the individual development projects and the Hub Plan streetscape and street network improvements would create potentially hazardous conditions for public transit operators. The qualitative assessment included a review of the design of the project features that would affect the transportation network, the number of vehicles added to various movements near the project, and the travel lanes where transit vehicles operate.

PEOPLE WALKING/ACCESSIBILITY ANALYSIS METHODOLOGY

Walking/accessibility conditions were assessed qualitatively. The qualitative assessment considered safety and right-of-way issues; potential worsening of existing or creation of new safety hazards; conflicts with bicycles, transit, and vehicles; and whether the project would interfere with the accessibility of people walking within the transportation study area or adjoining areas.

---

42 This was based on the combined hourly frequency of all buses that stop at the bus stop with the lowest bus capacity, as determined in Step 2: Bus Stop Capacity.

43 Options include typical (bus stops at every signalized intersection along the route), timed for buses (transit signal priority), or more frequent stops (signalized intersections between designated bus stops).

44 SFMTA indicated a running speed of 20 mph should be assumed as the maximum possible speed in the transportation study area during the p.m. peak-hour analysis period.

Bicycle Analysis Methodology

Bicycle conditions related to the Hub Plan area were assessed qualitatively, including bicycle routes, safety and right-of-way issues, potential worsening of existing or creation of new safety hazards, conflicts with vehicles and commercial vehicle loading activities, and whether the project would interfere with the accessibility of people bicycling within the transportation study area or in adjoining areas.

Loading Analysis Methodology

The commercial and passenger loading analysis was conducted by identifying changes to the on-street curb loading and vehicular parking regulations on streets within the parking and loading study area and the on-street supply of loading spaces that would be removed or added with implementation of the Hub Plan and individual development projects. The Hub Plan and two individual development projects would not result in an increase in commercial vehicle or passenger loading demand (including demand from taxis, transportation network companies, and other passenger loading) but, instead, could displace some existing demand to other locations. The analysis assesses the potential for existing demand to be met by other convenient loading spaces, either existing or relocated. If that demand is not met, the analysis assesses whether potentially hazardous conditions or significant delays that would affect vehicular traffic, transit, people bicycling, or people walking could occur.

Vehicular Parking Analysis Methodology

Vehicular parking conditions are not static because vehicular parking supply and demand varies from day to day, from day to night, from month to month, etc. Hence, the availability of vehicular parking spaces (or lack thereof) is not a permanent physical condition but, rather, a condition that changes over time as people change their ways and patterns of travel. Although vehicular parking conditions change over time, a substantial deficit in vehicular parking caused by a project that creates hazardous conditions or significant delays for vehicular traffic, transit, people bicycling, or people walking could adversely affect the physical environment. Whether a deficit in vehicular parking creates such conditions depends on the magnitude of the shortfall and the ability of drivers to change travel patterns or switch to other ways of travel. If a substantial deficit in vehicular parking caused by a project creates hazardous conditions or significant delays in travel, such a condition also could result in secondary physical environmental impacts (e.g., air quality or noise impacts cause by congestion), depending on the project and its setting.

The vehicular parking assessment was conducted by applying the department’s parking analysis screening criteria checklist to determine whether the Hub Plan and two individual development projects would result in a substantial vehicular parking deficit. According to the parking analysis screening criteria checklist, if a land use project is located within the department’s map-based screening area developed as part of the VMT analysis, and/or a transportation infrastructure project qualifies as an active transportation project or other minor transportation project, the project would not result in a vehicular parking deficit. For projects that do not meet the criteria and have a vehicular parking deficit of more than 600 spaces, then a substantial vehicular parking deficit would occur, and a vehicular parking analysis would be required to assess whether the secondary impact of the vehicular parking deficit would create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; result in inadequate access for emergency vehicles; or substantially delay public transit.

In situations where a vehicular parking deficit is considered substantial, in addition to alternate ways of travel, potentially hazardous conditions related to the vehicular parking loss and, more specifically, the increased vehicular traffic circling the area were considered in determining whether a substantial hazard related to the vehicular parking deficit of the project could occur such as double vehicular parking in a bicycle lane, a mixed-flow lane, or a transit-only lane or whether vehicles would cause or substantially increase instances of sidewalks and/or driveways being blocked as drivers attempt to locate vehicular parking.

Emergency Access Analysis Methodology

Potential impacts on emergency access were assessed qualitatively. Specifically, the analysis assessed whether the proposed streetscape and street network improvements and/or travel demand associated with the Hub Plan and two individual development projects would impair, hinder, or preclude adequate emergency vehicle access.

Project Travel Demand Analysis

Travel demand analysis was conducted for the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street. Travel demand refers to new person trips[45] by additional residents, employees, and visitors using the various ways of travel (e.g., by transit, walking, bicycling, automobile) that would be generated by the new land uses projected to be developed under the Hub Plan and individual development projects. The memorandum containing the detailed methodology and information used to calculate the project travel demand is included in Appendix D.[46]

This section summarizes the information and analysis contained in the travel demand memorandum and presents estimates of project-generated person trips by various ways of travel as well as the number of project-generated vehicle trips. In addition, for the individual development projects, this section presents estimates of commercial and passenger vehicle loading demand and the associated demand for loading spaces to accommodate the demand.

---

[45] A person trip is a trip made by one person by any means of transportation (vehicle, transit, walking, etc.).

[46] *The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, Hub Housing Sustainability District EIR Estimation of Project Travel Demand, Final Technical Memorandum,* January 2019. Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV (see Appendix D).

The Hub Plan

Subsequent development under the Hub Plan is projected to result in a net increase in the number of residential units in the Hub Plan area (i.e., 8,100 additional units). The travel demand analysis for the Hub Plan assumes full buildout of the projected land uses. The estimation of travel demand associated with the Hub Plan's projected change in the number of residential units and jobs, as well as changes in travel patterns associated with the Hub Plan's proposed streetscape and street network improvements, was based on output from SF-CHAMP model.

Table 3.B-8 summarizes the increase in the number of person trips and vehicle trips during the p.m. peak hour generated by subsequent development under the Hub Plan for both 2020 baseline and 2040 cumulative conditions. As shown in **Table 3.B-8**, during the weekday p.m. peak hour, development under the Hub Plan would generate about 21,900 new person trips, a 44 percent increase in the number of trips generated by existing land uses in the Hub Plan area. Of the total increase in person trips during the weekday p.m. peak hour, 30 percent would be by automobile, 18 percent by transit, and 52 percent by walking, bicycling, and other non-motorized ways.

About 93 percent of the new p.m. peak-hour person trips would be to and from areas within the city, with the greatest proportion occurring to and from the downtown/North Beach neighborhood. About 3 percent of all new weekday p.m. peak-hour trips would be to and from the East Bay, 3 percent to and from the South Bay, and less than 1 percent to and from the North Bay.

Although proposed streetscape and street network improvements under the Hub Plan would not generate vehicle trips, the removal of one travel lane on a 400-foot-long segment of Duboce Street would redistribute vehicle trips along the network. These redistributed vehicle trips were considered across all transportation analysis topics.

30 Van Ness Avenue Project

Travel demand estimates for the 30 Van Ness Project were based on the methodology and information contained in the 2019 Transportation Impact Analysis Guidelines.

The proposed 30 Van Ness Avenue Project consists of 21,000 square feet of retail space, up to 350,000 square feet of office space, and up to 610 residential units. The site currently contains 13,840 square feet of retail space, 184,102 square feet of office space, and 42 vehicular parking spaces. To provide a conservative assessment of project impacts, existing person and vehicle trips to and from the site were not subtracted from the trips that would be generated by the new uses.

TABLE 3.B-8. SUMMARY OF HUB PLAN AREA WEEKDAY DAILY AND P.M. PEAK-HOUR TRAVEL DEMAND BY WAY OF TRAVEL—2020 BASELINE AND 2040 CUMULATIVE CONDITIONS

Analysis Period/Analysis Scenario	Person Trips by Way of Travel				Vehicle Trips
	Auto	Transit	Non-motorized[b]	Total	
2020 Baseline Conditions					
Daily					
2020 baseline no project	92,093	40,129	87,654	219,875	80,209
2020 baseline plus project[a]	121,686	54,740	134,416	310,841	103,190
Change from 2020 baseline no project[c]	29,593	14,611	46,762	90,966	22,981
Percent change from 2020 baseline no project	32.1%	36.4%	53.3%	41.4%	28.7%
P.M. Peak Hour					
2020 baseline no project	18,333	11,423	19,575	49,331	15,529
2020 baseline plus project[a]	24,826	15,360	31,058	71,243	20,438
Change from 2020 baseline no project[c]	6,493	3,937	11,483	21,912	4,909
Percent change from 2020 baseline no project	35.4%	34.5%	58.7%	44.4%	31.6%
2040 Cumulative Conditions[d]					
Daily	151,196	63,601	156,142	370,939	125,090
P.M. Peak Hour	31,258	17,972	36,127	85,357	24,968

Source: Technical Memorandum – The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR – Estimation of Project Travel Demand, January 2019 (see Appendix D).

a. Baseline-plus-project conditions include development under the Hub Plan, including the individual development projects at 30 Van Ness Avenue and 98 Franklin Street.

b. Non-motorized includes walking, bicycle, and other non-motorized ways (e.g., skateboards, scooters).

c. Totals may not sum because of rounding.

d. The 2040 cumulative conditions include implementation of the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street.

Table 3.B-9 summarizes the 30 Van Ness Avenue Project's travel demand by ways of travel on a weekday daily basis and under p.m. peak-hour conditions. The proposed 30 Van Ness Avenue Project would generate approximately 12,280 new person trips on a weekday daily basis. During the weekday p.m. peak hour, the 30 Van Ness Avenue Project would generate about 1,097 new person trips and 182 new vehicle trips (58 inbound and 124 outbound). About 24 percent of the p.m. peak-hour person trips would be by automobile (including transportation network company vehicles and taxis), 28 percent by transit, and 48 percent by other ways of travel, including walking and bicycling.

TABLE 3.B-9. 30 VAN NESS AVENUE PROJECT WEEKDAY DAILY AND P.M. PEAK-HOUR TRAVEL DEMAND BY WAY OF TRAVEL

	Person Trips by Way of Travel					
Analysis Period	**Auto**	**Transit**	**Walk**	**Bicycle**	***Total***	**Vehicle Trips[a,b]**
Daily	2,986	3,418	5,448	427	12,280	2,080
P.M. Peak Hour	266	305	487	38	1,097	182

Source: *Technical Memorandum – The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR – Estimation of Project Travel Demand*, January 2019 (see Appendix D).

a. Transportation network company (TNC) vehicles (e.g., Uber and Lyft) and taxi trips are included in vehicle trips and automobile person trips.

b. The 30 Van Ness Avenue Project would include at least 350 residential units but possibly up to 610 units. As a conservative analysis, the higher 610-unit count was used in the travel demand analysis.

During the p.m. peak hour, the majority of the project-generated trips would be within the city. During the p.m. peak hour, about 42 percent of the transit trips and 31 percent of the vehicle trips would be to and from the North Bay, South Bay, and East Bay.

The 30 Van Ness Avenue Project would generate approximately 141 delivery-vehicle/service-vehicle trips per day. This corresponds to a demand for eight freight loading spaces during the peak hour of loading activity.[47] The 30 Van Ness Avenue Project would also generate approximately 110 passenger loading instances (including demand from taxis, transportation network companies, and other passenger loading) during the weekday p.m. peak hour, 55 of which would occur during the peak 15 minutes of the peak hour. This corresponds to a demand for four passenger loading spaces at the project site.[48]

98 Franklin Street Project

Similar to the 30 Van Ness Avenue Project, the estimation of travel demand for the 98 Franklin Street Project was based on the methodology and information contained in the 2019 Transportation Impact Analysis Guidelines.

The 98 Franklin Street Project consists of a residential tower with 345 dwelling units above a five-story podium hosting a high school and 3,100 square feet of retail. The high school would accommodate the 380 existing students who would be relocated from the French-American International School's 150 Oak Street site (approximately 200 feet west of the project site) and increase student enrollment by 60 (to a total of 440 students). The 98 Franklin Street Project would also result in the addition of up to five staff members, for a total of 65 staff members at the high school. Because the travel demand associated with the 380 existing students is

---

47 Freight loading demand calculated using Table 3 from the Appendix F in the 2019 Transportation Impact Analysis Guidelines. See Appendix D for additional details.

48 Passenger loading demand was calculated using the passenger loading methodology for taxi/TNC and pick-up/drop-off vehicle trip demand in Appendix F of the 2019 Transportation Impact Analysis Guidelines. See Appendix D for additional details.

accounted for under existing conditions, the travel demand analysis for the school was estimated for the net new increase in students and employees (i.e., 60 additional students and five additional employees). The site currently contains a vehicular parking lot with 100 spaces; however, as a conservative assessment of project impacts, the existing person and vehicle trips to and from the site were not subtracted from the trips that would be generated by the new uses. These trips may continue to occur near the project site.

The 98 Franklin Street Project would generate approximately 2,674 person trips on a weekday daily basis (see **Table 3.B-10**). During the p.m. peak hour, the project would generate approximately 248 new person trips and approximately 49 new vehicle trips (29 inbound and 20 outbound). About 30 percent of the p.m. peak-hour person trips would be by automobile (including transportation network company vehicles and taxis), 29 percent by transit, and 41 percent by other ways of travel (including walking and bicycling).

During the p.m. peak hour, the majority of the new project-generated trips would be within the city. During the p.m. peak hour, about 12 percent of the transit trips and 8 percent of the vehicle trips would be to and from the North Bay, South Bay, and East Bay.

TABLE 3.B-10. 98 FRANKLIN STREET PROJECT WEEKDAY DAILY AND P.M. PEAK-HOUR TRAVEL DEMAND BY WAY OF TRAVEL

	Person Trips by Way of Travel					
Analysis Period	**Auto**	**Transit**	**Walk**	**Bicycle**	***Total***	**Vehicle Trips**[a b]
Daily	769	773	1,050	82	2,674	543
P.M. Peak Hour	75	71	95	7	248	49

Source: *Technical Memorandum – The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR – Estimation of Project Travel Demand*, January 2019 (see Appendix D).

a. Transportation network company (TNC) vehicles (e.g., Uber and Lyft) and taxi trips are included in vehicle trips and automobile person trips.

b. Represents a net increase of 60 students and five staff members at the French-American International School; 32% of students and 50% of the staff members are expected to leave school during the p.m. peak hour.

The 98 Franklin Street Project would generate about six delivery-vehicle/service-vehicle trips per day. This corresponds to demand for one truck loading space during the peak hour of loading activity.[49] The 98 Franklin Street Project would also generate approximately 23 passenger loading instances (including demand from taxis, transportation network companies, and other passenger loading) during the weekday p.m. peak hour, 12 of which would occur

[49] Freight loading demand calculated using Table 3 from the Appendix F in the 2019 Transportation Impact Analysis Guidelines. See Appendix D for additional details.

during the peak 15 minutes of the peak hour.[50] This corresponds to a demand for one passenger loading space at the project site. This passenger loading does not include loading associated with school pickup or drop-off because the French-American International School would continue to direct families to conduct pickup and drop-off activities in their existing loading zone at 150 Oak Street.

CUMULATIVE IMPACTS METHODOLOGY

The estimation of travel demand forecasts used in the analysis of 2040 cumulative conditions was based on projected land use development and transportation network changes included in the San Francisco SF-CHAMP travel demand model, as described below. This represents a hybrid of the list-based and projections approach to cumulative modeling. The growth projections are based on population and employment assumptions developed by the Association of Bay Area Governments and account for the cumulative development projects described in **Table 3-2**, p. 3-17, as well as development under the Hub Plan and individual development projects at 30 Van Ness Avenue and 98 Franklin Street. In addition, the 2040 cumulative analysis assumes completion of certain planned and reasonably foreseeable transportation network changes, such as those listed below that could affect circulation in the transportation study area. These are also described in **Table 3-2**, p. 3-17, and include, but are not limited to:

- Better Market Street Project
- Civic Center Public Realm Plan[51]
- Muni Forward Transit Infrastructure Project and Service Improvements
- Central SoMa Plan Street Network Changes
- Western SoMa Community Plan Street Network Changes
- San Francisco Bicycle Plan (2009)
- San Francisco Bicycle Strategy 2013–2018
- Sixth Street Pedestrian Safety Project
- Seventh Street Road Diet Project
- Geary BRT Project
- Central Subway Project

---

[50] Passenger loading demand was calculated using the passenger loading methodology for taxi/TNC and pick-up/drop-off vehicle trip demand in Appendix F of the 2019 Transportation Impact Analysis Guidelines. See Appendix D for additional details.

[51] The Civic Center Plan is currently under design refinement and review. The Complete Street alternative for Polk Street, which assumes two southbound travel lanes and one northbound travel lane on Polk Street south of Grove Street, and two southbound lanes south of Grover Street was assumed in the cumulative analysis. *https://civiccentersf.org/design-options/polk-street-design/*.

The Better Market Street Project would implement various transportation improvements on a 2.2-mile segment of Market Street between Steuart Street and Octavia Boulevard. The Better Market Street Project EIR[52] analyzed a proposed project as well as a Western Variant that seeks additional improvements on the 0.6-mile section of Market Street between Octavia Boulevard and a point approximately 300 feet east of the intersection of Hayes and Market streets, which is within the Hub Plan transportation study area. The Western Variant includes additional improvements related to pedestrian and bicyclist safety, comfort, and mobility through additional reductions in conflicts between different ways of travel. Because the Western Variant includes changes within the Hub Plan area, both the proposed project and Western Variant were considered in the cumulative impact analysis.

2040 Cumulative Vehicle Forecasts

Future 2040 cumulative vehicular traffic volume forecasts for use in the operational transit travel-time analysis described above were developed using the City's SF-CHAMP travel demand model. The SF-CHAMP model also provides forecasts of vehicular traffic on regional freeways, major arterials, and the transportation study area roadway network, considering the available roadway capacity, origins and destinations of trips, and travel speeds. The 2040 cumulative model analysis incorporates land use development projections as well as planned transportation network projects.

The 2040 cumulative vehicular traffic volumes reflect future land use growth, including that occurring with implementation of the Hub Plan as well as transportation projects (e.g., Hub Plan streetscape and street network improvements, including diversions of vehicles from one street to another or shifts in vehicle travel from inside the transportation study area to outside the transportation study area). In general, weekday p.m. peak-hour traffic volumes at the study intersections are projected to increase between 2020 baseline and 2040 cumulative conditions generally by 0 to 30 percent and vary by street. The projected growth in vehicular traffic volumes is slightly higher on a percentage basis on the north–south streets in the western half of the transportation study area than in the eastern half. This generally reflects the development projects that would result from implementation of the Hub Plan. On some streets, such as Mission and Otis streets in the western half of the transportation study area, vehicular traffic volumes would decrease somewhat with implementation of transit-only lanes, removal of mixed-flow travel lanes, and vehicle turn restrictions.

---

[52] San Francisco Planning Department, Better Market Street Project EIR, February 2019, *https://sfplanning.org/project/better-market-street-environmental-review-process*.

IMPACT EVALUATION

Impact TR-1. The Hub Plan would require an extended duration for the construction period and intense construction activity, the secondary effects of which could create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit. (Significant and Unavoidable with Mitigation)

In general, the analysis of construction impacts is specific to individual projects. It includes a discussion of temporary roadway and sidewalk closures, relocation of bus stops, effects on roadway circulation due to construction trucks, and the increase in vehicle trips, transit trips, and vehicular parking demand associated with construction workers. It should be noted that construction-related transportation impacts associated with individual development, open space, or transportation projects are temporary and generally short term (e.g., typically between two and three years) and conducted in accordance with City requirements, described below. Therefore, they do not substantially affect conditions or circulation in the area for transit, people walking, or people bicycling. The proposed rezoning would allow for additional height at up to 18 sites within the Hub Plan area. Furthermore, the construction of subsequent development projects under the Hub Plan could occur at multiple sites at the same time, using the same access routes to and from the sites.

To the extent that the construction of several development projects occurs simultaneously, and within proximity to each other, there could be detours and delays for vehicles, including transit vehicles, as well as people bicycling. Therefore, construction-related transportation impacts would occur. In addition, construction on these sites could overlap with construction of the Hub Plan streetscape and street network improvements. If construction overlaps substantially between nearby development projects and the streetscape and street network projects, there is the potential for substantial interference with circulation and accessibility. Therefore, construction-related transportation impacts could occur during the period of overlap.

Construction for the proposed sidewalk widening and bulb-outs and the creation of a boulevard with medians, traffic and median islands, raised crosswalks and intersections, and special paving would require, to varying degrees, depending on the project, demolition of existing sidewalks, curbs, and concrete gutters and excavation to provide foundations for the new features. Traffic signals and related hardware would also require excavation. Implementation of the bikeway in both directions on 13th Street between Folsom and Mission streets and on Duboce Avenue between Mission and Valencia streets, which would involve the demarcation of lanes, would require temporary travel-lane closures. Bikeways are often striped on weekends or non-peak weekday times when vehicular traffic volumes are lower on the affected roadway. The widening of sidewalks along South Van Ness Avenue, 12th Street, Gough Street, and Otis Street and at the intersection of South Van Ness Avenue/Mission

Street/Otis Street/12th Street, as well as changes to alleys, would occur gradually as development occurs on these streets and/or as funding becomes available for implementation by the City. The duration of the Hub Plan streetscape and street network projects would vary, depending on the type of project and the extent.

Prior to construction of subsequent developments or street infrastructure projects, as part of the building permit process, the project sponsor and construction contractor(s) would be required to meet with San Francisco Public Works (public works) and SFMTA staff members to develop and review truck routing plans for the disposal of excavated materials, material delivery and storage, as well as staging for construction vehicles. The construction contractor would be required to adhere to SFMTA Blue Book regulations, including those regarding sidewalk and lane closures, and meet with SFMTA staff members to determine if any special traffic permits would be required. Prior to construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and avoid impacts on transit operations. In addition to the regulations in the SFMTA Blue Book, the contractor would be responsible for complying with all city, state, and federal codes, rules, and regulations.

In general, construction-related activities typically occur Monday through Friday between 7 a.m. and 7 p.m., with limited construction activities on weekends (on an as-needed basis). Construction staging typically occurs within project sites and from the adjacent sidewalks. These sidewalks along site frontages are usually closed for the duration of construction; temporary walkways for people walking are constructed in adjacent vehicular parking lanes, as needed. Temporary travel-lane closures are required to be coordinated with the City to reduce impacts on local traffic.

During a project's construction period, temporary and intermittent traffic and transit impacts may result from truck movements to and from project sites. Truck movements during periods of peak traffic flow would have greater potential to create conflicts than truck movements during non-peak hours because of the greater number of vehicles on the streets during the peak hour that would have to maneuver around queued trucks. Temporary vehicular parking demand associated with construction workers' vehicles and impacts on local intersections from vehicular traffic associated with construction workers would occur in proportion to the number of construction workers who use automobiles. Vehicular parking associated with construction workers' vehicles would temporarily increase occupancy levels in off-street vehicular parking facilities, either by those vehicles or by vehicles that currently park in on-street spaces and therefore would be displaced by the construction workers' vehicles.

In some instances, construction of the Hub Plan streetscape and street network improvements may require temporary street closures and rerouting of traffic; however, full street closures are not expected, with the exception of alleys where special paving may require full street closures. Sidewalk and travel-lane closures during construction are required to be coordinated with the

City to minimize the impacts on vehicles, including transit vehicles and bicycles, as well as people walking. In general, temporary construction-related travel-lane and sidewalk closures are subject to review and approval by the Interdepartmental Staff Committee on Traffic and Transportation, an interdepartmental committee that includes representatives from the department as well as public works, SFMTA, the police department, and the fire department.

As noted above, given the magnitude of projected subsequent development in the Hub Plan area and the transportation and streetscape projects anticipated to occur, as well as the uncertainty concerning construction schedules, construction activities associated with multiple overlapping projects could result in multiple travel-lane closures, high volumes of trucks in the vicinity, and sidewalk closures, which, in turn, could disrupt or delay transit, people bicycling, or people walking or result in potentially hazardous conditions (e.g., high volumes of trucks turning at intersections). Despite the best efforts of the project sponsors and project construction contractors, it is possible that simultaneous construction of subsequent development projects, as well as streetscape and street network improvements, could result in significant disruptions for vehicular traffic, transit, people walking, and people bicycling, even if each individual project alone would not result in significant impacts. In some instances, depending on construction activities, the overlap of two or more construction projects may not result in significant impacts. However, for conservative purposes, given the anticipated concurrent construction of multiple buildings in the Hub Plan area, some in proximity to each other; the expected intensity (i.e., the projected number of truck trips) and duration of construction; and the likely impact on transit, people bicycling, and people walking, the construction-related transportation impact under the Hub Plan would be considered a ***significant impact.***

MITIGATION MEASURES

M-TR-1: ***Construction Management Plan****.* For projects within the Hub Plan area, the project sponsor shall develop and, upon review and consultation with the San Francisco Municipal Transportation Agency and San Francisco Public Works, implement a Construction Management Plan to address issues related to transportation-related circulation, access, staging, and hours of delivery. The Construction Management Plan would disseminate appropriate information to contractors and affected agencies regarding coordinating construction activities to minimize disruption and maintain circulation in the project area to the extent possible, with particular focus on ensuring connectivity for transit, people walking, and people bicycling. The Construction Management Plan would supplement and expand, rather than modify or supersede, any manual, regulations, or provisions set forth by San Francisco Municipal Transportation Agency, San Francisco Public Works, other City departments and agencies, the California Department of Transportation.

If it is determined during a subsequent project-level transportation study that construction of the proposed project would overlap with adjacent project(s) so as to result in transportation-related impacts, the project sponsor or its contractor(s) shall consult with City departments such as San Francisco Municipal Transportation Agency and San Francisco Public Works and conduct interdepartmental meetings, as deemed necessary by San Francisco Municipal Transportation Agency, San Francisco Public Works, and the department, to coordinate a Construction Management Plan with adjacent project(s) to minimize the severity of any disruption to adjacent land uses and transportation facilities by overlapping construction-related transportation impacts to the extent feasible and commercially reasonable in light of noise regulations, labor and contract requirements, available daylight hours, and critical-path construction schedules. Based on review of this plan, the project may be required to consult with San Francisco Municipal Transportation Agency Muni Operations prior to construction to review potential effects on nearby transit operations.

The Construction Management Plan shall include a range of measures for the project sponsor, with San Francisco Municipal Transportation Agency concurrence, to select and prioritize to minimize disruption to the extent feasible so that overall circulation in the project area is maintained to the extent possible. Potential measures to be included in the Construction Management Plan shall include, but not be limited to, the following:

- *Restricted Truck Access Hours* – Limit truck movements between the peak hours of 7 a.m. and 9 a.m. and between 4 p.m. and 7 p.m. to the extent feasible and commercially reasonable in light of noise regulations, labor and contract requirements, available daylight hours, and critical-path construction schedules, as well as other times, if required by San Francisco Municipal Transportation Agency, to minimize disruptions to vehicular traffic, including transit during the a.m. and p.m. peak periods.
- *Construction Truck Routing Plans* – Identify optimal truck routes between regional facilities and the project site, taking into consideration truck routes of other development projects and any construction activities affecting the roadway network.
- *Carpooling, Bicycle, Walking, and Transit Access for Construction Workers* – The construction contractor shall encourage carpooling, bicycling, or walking to the project site as well as transit options for construction workers. These methods could include providing transit subsidies to construction workers, providing secure bicycle parking spaces, participating in free-to-employee

ride-matching programs from *www.511.org*, participating in the emergency ride-home program through the City (*www.sferh.org*), or providing transit information to construction workers.

- *Project Construction Updates for Adjacent Businesses and Residents* – To minimize construction impacts on access, the project sponsor shall provide nearby residences and adjacent businesses with regularly updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), and travel-lane closures. At regular intervals, to be defined in the Construction Management Plan and, if necessary, the Coordinated Construction Management Plan, a regular email notice shall be distributed by the project sponsor to adjacent neighbors, residents, and others, as requested, providing current construction information of interest to neighbors as well as contact information for those with specific construction inquiries or concerns.

Significance after Mitigation

Mitigation Measure M-TR-1 includes measures that would be included as part of the construction management plan to minimize significant construction-related transportation impacts during the overlap period. However, because imposing sequential (i.e., non-overlapping schedules) for all projects in the Hub Plan area would be infeasible due to potential lengthy delays in project implementation, substantial disruptions to transit and people walking and bicycling could continue to occur, even with implementation of the mitigation measure, and therefore, this measure would not reduce significant impacts to less-than-significant levels. Therefore, even with implementation of Mitigation Measure M-TR-1, the construction-related transportation impacts of the Hub Plan would remain ***significant and unavoidable with mitigation***. It should be noted that the identification of this significant impact does not preclude finding future less-than-significant or less-than-significant-with-mitigation impacts for subsequent projects.

Impact TR-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not require an extended duration for the construction period or intense construction activity, the secondary effects of which could not create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit. (Less than Significant)

30 Van Ness Avenue Project

The construction impact assessment for the 30 Van Ness Avenue Project is based on currently available information from the project sponsor and professional knowledge of typical construction practices citywide. Prior to construction, as part of the building permit process, the project sponsor and construction contractor(s) would be required to meet with public works and SFMTA staff members to develop and review truck routing plans for demolition, disposal of excavated materials, material delivery and storage, as well as staging for construction vehicles.

It is anticipated that construction of the 30 Van Ness Avenue Project would take approximately 44 months (about 3.5 years). Most construction activities would include demolition, shoring and excavation, foundation and below-grade construction, base building, exterior and interior finishes, and sidewalks and landscaping. Construction activities would occur during weekdays and weekends between 7 a.m. and 7 p.m. Construction activities that may extend beyond normal hours include concrete pours, crane and hoist erection and adjustment activities, site maintenance activities, and material delivery and handling. Construction on major legal holidays is not anticipated, although some may occur on an as-needed basis, such as equipment and material deliveries, to minimize the impact on people walking and bicycling, vehicular traffic, and transit.

The vehicular parking lanes and sidewalks on Fell Street and, at a minimum, the northern portion of Van Ness Avenue adjacent to the project site would be temporarily closed during construction. During construction, people walking adjacent to the project site on Fell Street and Van Ness Avenue would be rerouted to the opposite sides of each respective street. The Market Street sidewalk and the staircase to the Muni Van Ness station would remain open, with overhead protection and barricades for people walking to provide a safe environment. The existing electric overhead catenary system on Market Street would be maintained. The Market Street sidewalk may be temporarily reduced to a 15-foot width to allow paving and associated work in that area. Market Street bicycle facilities and vehicular travel lanes would not be affected.

Construction equipment would be staged along Fell Street and Van Ness Avenue. A tower crane would be located either within the property line or within the closed sidewalk zone. Construction materials would be loaded and off-loaded in the closed vehicular parking lane on Fell Street or the northern portion of Van Ness Avenue at Fell Street, adjacent to the property. Materials would be scheduled to arrive when required in the construction sequence.

Vehicular travel-lane closures are not anticipated; however, some periodic vehicular lane closures would be required (e.g., during deliveries of large pieces of construction equipment, erection/dismantling of tower cranes, work involving oversized construction materials). These activities may be conducted on weekends when activity associated with people walking, transit, and vehicular traffic is lower. All temporary vehicular travel lane closures would be coordinated with the City to minimize the impacts on local traffic flow on adjacent streets. Per the SFMTA Blue Book, construction activities that affect travel lanes on Fell Street are restricted between 7 a.m. and 7 p.m. every day as well as Market Street between 6 a.m. and 7 p.m. every day. Work within Van Ness Avenue is subject to Caltrans encroachment permits. In addition, construction may require work in BART's zone of influence; activities would need to be coordinated with the BART Real Estate Department, which coordinates permits and plan review for any construction on, or adjacent to, the BART right-of-way, including the Muni Van Ness station.

There are no curbside bus stops adjacent to the project site on Fell or Market streets. There is an existing bus stop for the northbound 47 Van Ness and 49 Van Ness-Mission routes adjacent to the project site, immediately north of Market Street. However, it is anticipated that Van Ness BRT service would be implemented prior to initiation of construction of the 30 Van Ness Avenue Project in 2020 and that bus service would be relocated to the median transit-only lanes and platforms. If BRT service is not implemented prior to start of construction, then the existing bus stop may need to be relocated temporarily (e.g., north of Fell Street). Support poles for the electric overhead catenary system on Van Ness Avenue would need to be maintained during project construction. Prior to construction, the project contractor would contact Muni's Street Operations and Special Events Office to coordinate construction activities and minimize any conflicts with transit operations on Market Street.

Removal of excavated materials would require, on average, 26 trucks onsite per shift per day for about 60 days. Deliveries of materials during construction would vary, with an anticipated average of 16 trucks per day and a peak of 50 trucks per day, which would be sequenced to meet construction demand. The proposed haul route for trucks arriving from northbound U.S. 101 would be Mission Street, then continuing onto South Van Ness Avenue and Van Ness Avenue and arriving on the Van Ness Avenue side of the project site. Trucks would leave the project site by turning right onto Fell Street and continuing south to 10th Street to the U.S. 101 ramps. The impact of construction truck traffic would be a temporary lessening of the capacities of streets due to the slower movement and larger turning radii of trucks, which may block travel lanes and affect both traffic and Muni operations.

The greatest number of construction workers on the project site would be during the regular shift, when there would be an average of 120 workers onsite and a maximum of 250 workers onsite. Construction workers who drive to the site would cause a temporary vehicular parking demand. The time-limited vehicular parking in the vicinity of the project site would limit legal all-day vehicular parking by construction personnel. Because no dedicated vehicular parking for construction workers would be provided by the construction contractor, it is anticipated that construction workers would park in nearby vehicular parking facilities.

Overall, construction of the 30 Van Ness Avenue Project would maintain circulation for people walking and bicycling, and vehicular traffic in the project vicinity; however, some travel-lane and sidewalk closures would be required during the 44-month construction period. Construction would be required to meet City rules and guidance so that work is done safely and with the least possible interference with people walking and bicycling, transit vehicles, and other vehicles; therefore, it would not result in potentially hazardous conditions. For the reasons described above, the 30 Van Ness Avenue Project's construction-related transportation impacts would be ***less than significant***.

98 Franklin Street Project

The construction impact assessment for the 98 Franklin Street Project is based on currently available information from the project sponsor and professional knowledge of typical construction practices citywide. Prior to construction, as part of the building permit process, the project sponsor and construction contractor(s) would be required to meet with public works and SFMTA staff members to develop and review truck routing plans for demolition, disposal of excavated materials, material delivery and storage, as well as staging for construction vehicles.

It is anticipated that construction of the 98 Franklin Street Project would take approximately 27 months (about 2.25 years). Most construction activities would include demolition, shoring and excavation, foundation and below-grade construction, above-grade structure work, exterior and interior finishes, and sidewalks and landscaping. Construction activities would occur for construction workers on weekdays and weekends between 6 a.m. to 8 p.m., and in accordance with City regulations on building construction hours. Construction activities that may extend beyond normal hours include concrete pours and road work. Construction on major legal holidays is not anticipated, although some may occur on an as-needed basis, such as equipment and material deliveries, to minimize the impact on people walking and people bicycling, vehicular traffic, and transit.

Construction materials would be loaded and off-loaded on Franklin or Oak streets, and materials would arrive when required in the construction sequence. Construction staging would occur onsite and on the sidewalks and in the vehicular parking lanes adjacent to the project site on Franklin, Oak, and Market streets. It is anticipated that a portion of the sidewalks adjacent to the project site on Franklin and Oak streets would be closed for the duration of construction. People walking would be directed to the opposite sides of the street. On Market Street, it is anticipated that a protected walkway for people walking would be provided within the remaining sidewalk. In the vicinity of the project site, people bicycling share the travel lane with right-turning vehicles and would not be substantially affected by the staging of project construction materials along the Market Street frontage. The existing bicycle lane on Market Street east of the project site would not be affected by project construction activities.

Construction activities may require temporary travel-lane closures of the easternmost travel lane on Franklin Street approximately twice per week for about 12 months, until the interior elevators in the above-grade structure are operational. This travel-lane closure would be coordinated with the City to minimize the impacts on local traffic flow on Franklin Street. Additional periodic lane closures would most likely be required (e.g., during deliveries of large pieces of construction equipment, erection/dismantling of tower cranes, during work involving oversized construction materials). These activities may be conducted on weekends when activity associated with people walking, transit, and vehicular traffic is lower. Per the SFMTA

Blue Book, construction activities that affect travel lanes on Franklin Street are restricted between 7 a.m. and 7 p.m. every day and Market Street between 6 a.m. and 7 p.m. every day.

There are no curbside bus stops adjacent to the project site on Franklin, Oak, or Market streets. Prior to construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and minimize any conflicts with transit operations on Market Street.

Construction of the project would require, on average, 60 trucks onsite per shift per day and a maximum of 90 trucks onsite per shift per day during excavation. The greatest number of trucks traveling to and from the site would occur during the tower mat concrete pour, which would require 550 truck trips over one 14-hour period on a weekend. The proposed haul route for the excavated soil would have trucks arrive at the project site via northbound U.S. 101 and either (1) continue north on Octavia Boulevard, turn right on Oak Street eastbound, continue to Franklin Street northbound, continue to Fell Street eastbound, continue to Van Ness southbound, and continue to Oak Street eastbound or (2) continue north on Octavia Boulevard, turn right on Page Street, and turn left on Franklin Street. The impact of construction truck traffic would be a temporary lessening of the capacities of streets due to the slower movement and larger turning radii of trucks, which may block travel lanes and affect both traffic and Muni operations.

The greatest number of construction workers on the project site would be during the regular shift, when there would be an average of 200 workers onsite and a maximum of 350 workers onsite. The way of access for construction workers would be primarily public transit because of the site's proximity to numerous transit routes. Construction workers who drive to the site would temporarily increase vehicular parking demand. The time-limited vehicular parking in the vicinity of the project site would limit legal all-day vehicular parking by construction workers. Because no dedicated vehicular parking for construction workers would be provided by the construction contractor, it is anticipated that construction workers would park in nearby vehicular parking facilities, such as the Civic Center Garage or the Performing Arts Garage.

Overall, construction of the 98 Franklin Street Project would maintain circulation for people walking and bicycling, and vehicular traffic in the project vicinity; however, some travel lane and sidewalk closures would be required during the 27-month construction period. Construction activities would be required to meet City rules and guidance so that work is done safely and with the least possible interference with people walking and bicycling, transit vehicles, and other vehicles; therefore, it would not result in potentially hazardous conditions. For the reasons described above, the 98 Franklin Street Project's construction-related transportation impacts would be ***less than significant.***

Impact TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not cause substantial additional VMT or induced automobile travel. (Less than Significant)

With respect to VMT, the effects of the proposed rezoning under the Hub Plan are analyzed in this EIR at a programmatic level; the proposed Hub Plan streetscape and street network improvements are analyzed at a project level. Subsequent development projects within the Hub Plan area would be required to go through separate environmental review. A project-level analysis is provided for the 30 Van Ness Avenue Project and the 98 Franklin Street Project.

THE HUB PLAN

The analysis of the implementation of the Hub Plan on VMT was conducted by comparing the VMT per capita for conditions without and with implementation of the Hub Plan, as well as assessing consistency with the region's Sustainable Communities Strategy. As described in Approach to Analysis, specifically under VMT Analysis Methodology, beginning on p. 3.B-38, the City's SF-CHAMP travel demand model was used to calculate VMT per capita for conditions without and with implementation of the Hub Plan. **Table 3.B-11** presents the daily VMT per capita for the three land use types for conditions without and with implementation of the Hub Plan for 2020 conditions, and indicates that the VMT per capita for residential, office, and retail land uses within the Hub Plan area are substantially below the Bay Area regional average.

- For the residential uses, the average daily VMT per capita for the Hub Plan area without and with implementation of the Hub Plan would be between 78 and 79 percent below the 2020 baseline regional average daily VMT per capita.
- For the office uses, the average daily work-related VMT per employee for the Hub Plan area without and with implementation of the Hub Plan would be between 59 and 61 percent below the 2020 baseline regional average daily VMT per employee.
- For the retail uses, the average daily retail VMT per employee for the Hub Plan area without and with implementation of the Hub Plan would be between 31 and 34 percent below the 2020 baseline regional average daily VMT per employee.

With implementation of the Hub Plan, subsequent development projects under the Hub Plan would remain within an area of the city where the daily VMT per capita is more than 15 percent below the regional VMT thresholds. Moreover, subsequent development projects under the Hub Plan would share many of the characteristics that result in low VMT per capita in the area, characteristics such as density, diversity of uses, proximity to transit, etc. As such, implementation of the Hub Plan would not generate a substantial increase in VMT. In addition, under planning commission resolution 19579, the impact assessment of the Hub Plan's rezoning

TABLE 3.B-11. DAILY VMT PER CAPITA – HUB PLAN AREA 2020 AND 2040 CONDITIONS WITHOUT HUB PLAN AND WITH IMPLEMENTATION OF THE HUB PLAN

Analysis Scenario/Trip Type (Land Use)	Bay Area Regional Average	Without Hub Plan [c]	With Hub Plan [c]
2020 Baseline			
Households (residential)	14.2	2.9	3.1
Employment (office)	14.3	5.9	5.6
Visitors (retail)	12.6	8.7	8.3
2040 Cumulative			
Households (residential)	13.4	2.7	2.8
Employment (office)	13.4	5.8	5.7
Visitors (retail)	12.4	9.0	8.8

Source: San Francisco County Transportation Authority, SF-CHAMP 5.2, 2020 and 2040 Hub Plan Project Model Runs.

[a.] Average daily VMT per capita for the 15 Transportation Analysis Zones (TAZs) comprising the Hub Plan area.

proposal requires demonstrating consistency with the region's Sustainable Communities Strategy. The Metropolitan Transportation Commission's (MTC's) Plan Bay Area 2040, adopted in July 2017, is the region's Sustainable Communities Strategy. The EIR prepared for Plan Bay Area 2040 identified an overall reduction in VMT per capita under Plan Bay Area 2040 compared to existing conditions (2015), and the impact related to VMT was determined to be less than significant. The analysis of the Sustainable Communities Strategy for San Francisco indicated that with implementation of Plan Bay Area 2040 the VMT per capita in 2040 would be about 57 percent less than for the region, and that the VMT per capita within San Francisco would decrease by 5 percent between 2015 and 2040 (with implementation of Plan Bay Area 2040).[53] Because the Plan Bay Area 2040 analysis found that VMT per capita within San Francisco would decrease between 2015 and 2040 and overall VMT per capita in San Francisco would be substantially less than it is in the region, the Hub Plan would be considered consistent with the region's Sustainable Communities Strategy. Therefore, the Hub Plan's impacts related to VMT would be ***less than significant***.

STREETSCAPE AND STREET NETWORK IMPROVEMENTS

The transportation changes of the Hub Plan include the types identified by the Office of Planning and Research that would not substantially induce automobile travel (e.g., raised intersections and crosswalks, wider sidewalks, bulb-outs, the removal of vehicular parking, signal timing changes,

[53] Metropolitan Transportation Commission, *Plan Bay Area 2040 Draft EIR*, SCH #2016.052041, April 2017, p. 2.1-34; Final EIR, July 2017; Addendum to the Final EIR, March 2018, *https://www.planbayarea.org/2040-plan/environmental-impact-report*.

modifications to travel lanes). Thus, the proposed streetscape and street network improvements would not induce automobile travel, and implementation of the Hub Plan's streetscape and street network improvements would result in less-than-significant VMT impacts.

The streetscape and street network improvements would implement features that would alter the transportation network. These include new and reconstructed sidewalks, sidewalk bulb-outs, bicycle facilities, removal of on-street vehicular parking, on-street commercial and passenger loading/unloading zones, new traffic signals and signal timing changes, raised crosswalks and intersections, and modified travel lanes. These features fit with the general types of projects identified in Approach to Analysis, under VMT Analysis Methodology, p. 3.B-38, that would not substantially induce automobile travel. Therefore, the proposed streetscape and street network improvements would not result in a substantial increase in automobile travel.[54] For the reasons described above, streetscape and street network improvement's impacts related to VMT and induced automobile travel would be ***less than significant***.

30 Van Ness Avenue Project

Land use development projects may cause additional VMT. The existing average daily VMT per capita for the transportation analysis zone in which the 30 Van Ness Avenue project site is located (i.e., TAZ 647) is below the existing regional average daily VMT.[55] In addition:

- For the residential uses, the average daily VMT per capita is 2.5, which is about 86 percent below the existing regional average daily VMT per capita of 17.2.
- For office uses, the average daily work-related VMT per employee is 7.6, which is about 60 percent below the existing regional average daily work-related VMT per employee of 19.1.
- For the retail uses, the average daily retail VMT per employee is 8.1, which is about 46 percent below the existing regional average daily retail VMT per employee of 14.9.

54 San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis*, Appendix F, Attachment A, March 3, 2016.

55 The map-based screening for residential, office, and retail projects was applied to the proposed project. The 30 Van Ness Avenue project site is located within TAZ 647, which is within an area of the city where the existing VMT is more than 15 percent below the regional VMT thresholds, as documented in *Executive Summary: Resolution Modifying Transportation Impact Analysis*, Appendix A, Attachment F (Methodologies, Significance Criteria, Thresholds of Significance, and Screening Criteria for Vehicle Miles Traveled and Induced Automobile Travel Impacts). San Francisco County Transportation Authority memorandum, March 3, 2016, *http://commissions.sfplanning.org/cpcpackets/Align-CPC%20exec%20summary_20160303_Final.pdf*.

Because the 30 Van Ness Avenue Project proposes to provide vehicular parking in excess of that permitted for residential uses under the Hub Plan, it would not meet the department's proximity to transit stations criterion.[56] Therefore, an additional assessment was conducted to review the indirect impact of the project's parking supply in affecting the VMT per capita for the residential uses. Per the 2019 Transportation Impact Analysis Guidelines, the methodology for this additional analysis compares the existing parking supply rate in the surrounding neighborhood (i.e., the neighborhood parking rate) to the project's proposed parking rate.

The neighborhood parking rate for residential uses in TAZ 647, which is where the site for the 30 Van Ness Avenue Project is located, is 0.56 vehicular parking space per residential unit.[57] The 30 Van Ness Avenue Project would provide a maximum of 243 vehicular parking spaces for the 350 to 610 residential units; this analysis conservatively uses the lowest residential unit count of 350, or 0.69 vehicular parking space per unit.[58] The parking rate of 0.69 space per unit is slightly higher than the neighborhood's average of 0.56 space. However, given that existing residential VMT per capita for the TAZ (i.e., 2.5 VMT per capita) is substantially lower than the threshold of 15 percent below the regional daily residential VMT per capita (i.e., 17.2 VMT per capita), it is unlikely that the 30 Van Ness Avenue Project's ratio of parking spaces per dwelling unit would result in an exceedance of the residential VMT threshold. Therefore, the 30 Van Ness Avenue Project would not substantially increase VMT per capita with the residential use.

As described above, the 30 Van Ness Avenue Project would meet the City's map-based screening for residential, office, and retail projects (i.e., the project site is within an area of the city where the existing VMT is more than 15 percent below the regional VMT thresholds), its proposed vehicle parking rate would not substantially increase VMT per capita with the residential use, and it would include features that would be similar to features at other developments in the area in terms of density and the mix of uses. As such, the 30 Van Ness Avenue Project's land uses would not generate a substantial increase in VMT.

---

[56] As indicated in the VMT Analysis Methodology, starting on p. 3.B-38, the department presumes that residential, retail, and office projects, as well as projects with a mix of these uses, proposed within 0.5 mile of an existing major transit stop or an existing stop along a high-quality transit corridor would not exceed the VMT thresholds of significance. However, this presumption would not apply if the project would have a floor area ratio of less than 0.75; would include more parking for use by residents, customers, or employees of the project than required or allowed without a conditional use; or would be inconsistent with the applicable Sustainable Communities Strategy.

[57] The existing neighborhood vehicle parking rate takes into account the number of parking spaces and residential units for multiuse buildings in the TAZ itself and other nearby TAZs (within 0.75 mile, based on walking distance), with more distant parking spaces and residential units given decreasing weight.

[58] The 30 Van Ness Avenue project sponsor would seek a planning code text amendment to allow a mixed-use project in the Hub Plan area, providing at least 25 percent onsite (or 33 percent offsite) affordable housing to reallocate permitted vehicular parking spaces from nonresidential to residential land uses. Permitted vehicular parking for residential uses would be 0.25 space per unit, and permitted vehicular parking for nonresidential uses would be 7 percent of the occupied floor area. The 30 Van Ness Avenue Project would not exceed these amounts.

The 30 Van Ness Avenue Project would also include features that would alter the transportation network. These features include reconstructed and widened sidewalk areas, the removal of on-street vehicular parking, and on-street commercial and passenger loading zones. These features fit within the general types of projects that would not substantially induce automobile travel. Therefore, for the reasons described above, the 30 Van Ness Avenue Project's impacts related to VMT and induced automobile travel would be ***less than significant***.

98 Franklin Street Project

The existing average daily VMT per capita for the transportation analysis zone in which the 98 Franklin Street project site is located (i.e., TAZ 647) is below the existing regional average daily VMT.[59] In addition:

- For the residential uses, the average daily VMT per capita is 3.5, which is about 80 percent below the existing regional average daily VMT per capita of 17.2.
- For the office uses (i.e., institutional), the average daily work-related VMT per employee is 7.6, which is about 60 percent below the existing regional average daily work-related VMT per employee of 19.1.
- For the retail uses, the average daily retail VMT per employee is 8.3, which is about 44 percent below the existing regional average daily retail VMT per employee of 14.9.

As described above, the project site is within an area of the city where the existing VMT is more than 15 percent below the regional VMT thresholds. The 98 Franklin Street Project would meet the City's map-based screening for residential, office, and retail projects, and it would include similar features to other developments in the area in terms of density and mix of uses. As such, the 98 Franklin Street Project's land uses would not generate a substantial increase in VMT. Furthermore, the project site meets the proximity to transit stations screening criterion, which also indicates that the 98 Franklin Street Project's uses would not cause substantial additional VMT.[60]

---

59 The map-based screening for residential, office, and retail projects was applied to the proposed project. The 98 Franklin Street project site is located within TAZ 589, which is within an area of the city where the existing VMT is more than 15 percent below the regional VMT thresholds, as documented in *Executive Summary: Resolution Modifying Transportation Impact Analysis,* Appendix A, Attachment F (Methodologies, Significance Criteria. Thresholds of Significance, and Screening Criteria for Vehicle Miles Traveled and Induced Automobile Travel Impacts). San Francisco County Transportation Authority memorandum, March 3, 2016, *http://commissions.sfplanning.org/cpcpackets/Align-CPC%20exec%20summary_20160303_Final.pdf*

60 San Francisco Planning Department, *Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis for the 98 Franklin Street Project*, April 19, 2019.

The 98 Franklin Street Project would also include features that would alter the transportation network. These features include reconstructed and widened sidewalks, reconfigured on-street vehicular parking, and on-street commercial and passenger loading zones. These features fit within the general types of projects that would not substantially induce automobile travel. Therefore, for the reasons described above, the 98 Franklin Street Project's impacts related to VMT and induced automobile travel would be ***less than significant***.

Impact TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create major driving hazards. (Less than Significant)

HUB PLAN

Subsequent development projects within the Hub Plan area would be required to undergo review by City agencies, including a review of ground-floor/street-level operations so that loading operations and vehicle access are adequately accommodated without obstructing, hindering, or impairing drivers' reasonable and safe views of other vehicles, people walking, or people bicycling on the same street and/or restricting the ability of a driver to stop a motor vehicle without danger of an ensuing collision. Design features of subsequent development projects would need to be consistent with *Better Streets Plan* standards and Vision Zero policies, both of which focus on eliminating existing hazards and designing the transportation network so as to enhance safety of all ways of travel. Although subsequent development under the Hub Plan would add vehicle trips to the surrounding roadways, this general increase in vehicular traffic volumes would be distributed among multiple streets in the transportation study area and would not be considered a traffic hazard.

The streetscape and street network improvements were designed to reduce vehicle hazards by increasing visibility and slowing vehicular traffic. The proposed streetscape and street network improvements were developed in consultation with various City agencies to prioritize safe travel for people bicycling and people walking within the transportation study area. The proposed streetscape and street network improvements are presented in Chapter 2, Project Description, starting on p. 2-32, and include sideway widening and bulb-outs, opening sidewalks, raised crosswalks and intersections within alleys, shared streets and pedestrian-only alleys, separated through and local travel lanes with a median, conversion of one-way streets to two-way streets, new signalized crossings for people walking, new traffic signals, and changes to on-street curb regulations. None of these are types of projects or in locations that would result in driving hazards.

The streetscape and street network designs would undergo more detailed design and review. The street designs would be subject to approval by SFMTA, public works, and the fire department, along with other City agencies. Therefore, the changes to the transportation network would be consistent with City policies and design standards and would not result in driving hazards. Thus, for the reasons described above, the Hub Plan would not create potentially hazardous conditions for people driving, and impacts related to driving hazards would be ***less than significant***.

30 Van Ness Avenue Project

In assessing driving hazards for the 30 Van Ness Avenue Project, the proposed project's building characteristics were reviewed to determine whether they would obstruct, hinder, or impair drivers' reasonable and safe views of other vehicles, people walking, or people bicycling on the same street and/or restrict the ability of a driver to stop a motor vehicle without danger of an ensuing collision.

The 30 Van Ness Avenue Project would not introduce any features that would result in driving hazards. As discussed in Impact TR-9, below, the 30 Van Ness Avenue Project would provide both onsite and on-street commercial loading spaces to accommodate the commercial loading demand generated by the proposed residential, office and retail uses and provide passenger loading zones to accommodate passenger loading needs. The sidewalk bulb-out adjacent to the project site on Fell Street and the recessed commercial and passenger loading zone on Van Ness Avenue have been designed to enhance the safety of people walking at these locations, conform to SFMTA and *Better Streets Plan* standards, and not create potentially hazardous conditions for people driving.

The 30 Van Ness Avenue Project would provide a total of 243 vehicular parking spaces in below-grade levels that would be accessed from Fell Street, similar to where vehicular access to the existing building on the project site is provided (there are about 40 vehicular parking spaces on the ground floor and mezzanine level of the existing building on the project site). The garage ramp to the below-grade levels would provide space for vehicles accessing the garage and would not result in queues within the travel lane on Fell Street. Given the primarily residential use of the vehicular parking spaces, with a lower trip generation rate than commercial uses, minimal, if any, queuing associated with vehicles accessing the project garage would be expected.

Adjacent to the project site, Fell Street has three eastbound travel lanes, which allow drivers traveling eastbound to shift travel lanes, if needed. In addition, the curb lane adjacent to the project site is a right-turn-only lane (for vehicles traveling from Fell Street onto Market Street), which has fewer vehicles than the two adjacent through lanes. Provision of a loading driveway curb cut and a no parking zone to the west of the garage driveway would allow drivers entering and exiting the garage to see each other, as well as to see other vehicles within the right-most lane of eastbound Fell Street. The proposed garage would include visual and audible signals to alert passing drivers and people walking and people bicycling of an approaching exiting vehicle. Thus, the 30 Van Ness Avenue Project would not create potentially hazardous conditions for people driving, and impacts related to driving hazards would be ***less than significant***.

98 Franklin Street Project

The 98 Franklin Street Project's building characteristics were reviewed to determine whether they would create a traffic hazard for people driving. The 98 Franklin Street Project would eliminate the three existing curb cuts adjacent to the project site on Oak Street and relocate the existing curb cut on Franklin Street. The proposed curb cut into the project garage would be approximately 110 feet south of Oak Street. The width of the curb cut would be reduced from 25 feet under existing conditions to 20 feet wide. A total of 111 vehicular parking spaces would be provided in below-grade levels; therefore, queuing space would be provided on the ramp for vehicles accessing the garage.

Queues within the travel lane on Franklin Street would not occur. Because the number of vehicular parking spaces within the garage would be limited and the spaces would be for residential uses, with a lower trip generation rate than commercial uses, minimal, if any, queues are anticipated that would extend into the adjacent travel lanes on Franklin Street. Adjacent to the project site, Franklin Street has three northbound travel lanes, which allow drivers traveling northbound to shift travel lanes, if needed. In addition, on-street parking south of the driveway would be located consistent with City standards to provide adequate sight distance for drivers exiting the driveway. Thus, the 98 Franklin Street Project would not introduce any features that would result in driving hazards.

As discussed in Impact TR-9, below, the 98 Franklin Street Project would provide both onsite truck and service-vehicle loading spaces to accommodate the commercial loading demand generated by the proposed residential, school, and retail uses; provide a shared commercial and passenger loading zone on Oak Street to accommodate passenger loading needs; and provide additional on-street commercial loading space. The sidewalk bulb-outs adjacent to the project site on Oak and Franklin streets have been designed to enhance safety for people walking at these locations, conform to SFMTA and *Better Streets Plan* standards, and not create potentially hazardous conditions for people driving. Thus, the 98 Franklin Street Project would not create potentially hazardous conditions for people driving, and impacts related to driving hazards would be ***less than significant***.

Impact TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially delay local or regional transit or create potentially hazardous conditions for public transit providers. (Less than Significant)

Hub Plan

Implementation of the Hub Plan would increase transit travel times because of a combination of factors, including additional vehicular traffic and transit ridership generated by subsequent development under the Hub Plan as well as proposed changes to the roadway network. During the weekday p.m. peak hour, subsequent development under the Hub Plan would generate 3,937 transit trips that would be distributed among the numerous bus routes and subway lines serving the transportation study area. In addition, subsequent development under the Hub Plan would generate about 4,909 vehicle trips during the p.m. peak hour that would use streets within the transportation study area. The greatest increases in traffic volumes are projected to occur on streets with no transit routes (e.g., South Van Ness Avenue south of Mission Street, Octavia Boulevard, Gough Street, Franklin Street), or on streets where transit-only lanes will be implemented by the 2020 baseline year (e.g., on Van Ness Avenue, on South Van Ness Avenue north of Mission Street, and on Otis Street).

Local Transit. As discussed in Approach to Analysis, beginning on p. 3.B-37, the impact of the Hub Plan, including changes to the streetscape and street network, on Muni transit operations, such as increased transit travel times, was analyzed for eight Muni routes under weekday p.m. peak-hour conditions. The routes that were analyzed are 5 Fulton, 5R Fulton Rapid, 9 San Bruno, 9R San Bruno Rapid, 14 Mission, 14R Mission Rapid, 19 Polk and 21 Hayes. The analysis assessed the impact of project-generated vehicles and transit ridership on these routes throughout the transportation study area and considered the proposed streetscape and street network improvements. Impacts on transit operations were determined to be significant if increases in travel times during the peak hour of analysis on a particular route in a particular direction would be greater than or equal to four minutes or half of the existing headway, whichever would be less.

Table 3.B-12 presents the transit travel time analysis for the eight Muni routes under baseline-plus-project conditions. The table presents the headway for routes under 2020 baseline conditions, the threshold applicable to the route (i.e., four minutes or half the headway, whichever is less), and the transit travel time changes between 2020 baseline and 2020 baseline-plus-project conditions. As shown in the table, the increases in transit travel times for all of the routes would be less than the significance threshold of four minutes or half the headway, and therefore, implementation of the Hub Plan would not result in a significant impact on transit operations.

The proposed streetscape and street network improvements were also assessed qualitatively to determine whether any features would result in potentially hazardous conditions for transit operators. Most proposed streetscape and street network improvements are related to enhancing the environment for people walking. They generally serve to improve drivers' sightlines and increase the visibility of people walking for drivers. The proposed streetscape and street network improvements would not substantially change travel lanes within the transportation study area so as to create potentially hazardous conditions for transit operations. Hub Plan streetscape and street network improvements that would modify travel lanes consist of the following:

- The vehicular parking lane on the east side of Otis Street between McCoppin Street and Duboce Avenue would be converted to a northbound lane but would not affect operation of the 14 Mission, 14R Mission Rapid, or 49 Van Ness-Mission routes. These routes would continue to travel within the existing southbound transit-only lane on Otis Street.

TABLE 3.B-12. MUNI TRANSIT OPERATIONS ANALYSIS – 2020 BASELINE-PLUS-PROJECT CONDITIONS – WEEKDAY P.M. PEAK HOUR

Route/Direction[a]	2020 Baseline Headways (min:sec)	Threshold (half the headway or four minutes, whichever is less)	Travel Time Change from 2020 Baseline Conditions (min:sec)
5 Fulton – inbound	9:00	4:00	1:54
5 Fulton – outbound	9:00	4:00	0:42
5R Fulton Rapid – inbound	6:00	3:00	0:26
5R Fulton Rapid – outbound	6:00	3:00	0:25
9 San Bruno – inbound	12:00	4:00	0:57
9 San Bruno – outbound	12:00	4:00	0:29
9R San Bruno Rapid – inbound	8:00	4:00	0:03
9R San Bruno Rapid – outbound	8:00	4:00	0:02
14 Mission – inbound	15:00	4:00	0:03
14 Mission – outbound	15:00	4:00	0:23
14R Mission Rapid – inbound	8:00	4:00	0:05
14R Mission Rapid – outbound	8:00	4:00	0:04
19 Polk – inbound	15:00	4:00	0:22
19 Polk – outbound	15:00	4:00	0:10
21 Hayes – inbound	9:00	4:00	1:08
21 Hayes – outbound	9:00	4:00	0:32

Source: SFMTA, Fehr & Peers, 2019.

[a.] Inbound direction generally means headed toward downtown San Francisco. It is the opposite of the outbound direction. Routes that do not go downtown have a consistent definition for inbound and outbound. For example, the 19 Polk is defined as heading inbound to the Marina and outbound to Hunters Point.

- On Mission Street northbound, the west curb lane, which is currently the U-turn lane from northbound Mission Street to southbound Otis Street, would be converted to a transit-only lane as part of the Muni Forward project; the U-turn movement would be eliminated. This streetscape and street network change would facilitate bus access from northbound Mission Street to the median transit-only lane on northbound South Van Ness Avenue.
- Other proposed streetscape and street network improvements that would affect travel lanes would occur on 12th and Stevenson streets; however, no transit routes would be affected by these changes.

For the above reasons, the proposed Hub Plan streetscape and street network improvements would not result in potentially hazardous conditions for transit operators.

Regional Transit. Both SamTrans and Golden Gate Transit buses travel on city streets within the transportation study area, including Mission, Seventh, Eighth, Ninth and 10th streets. In addition, under baseline conditions, Golden Gate Transit would operate within the median transit-only lane and stop at median platforms on Van Ness Avenue (i.e., at completion of the Van Ness BRT project). Regional transit running on Van Ness Avenue within transit-only lanes would not experience increased delays because transit operations would not be affected by vehicles traveling in the adjacent mixed-flow travel lanes. Regional routes running on Mission Street through the transportation study area would experience similar increases in travel times, as would Muni routes on Mission Street (see **Table 3.B-12**, p. 3.B-72); similar to the Muni routes, the increase would remain below the significance threshold. Regional routes using Seventh and Eighth streets through the transportation study area would experience similar changes in travel times, as would the 19 Polk on these streets (see **Table 3.B-12**, p. 3.B-72); similar to the 19 Polk, the increase would remain below the significance threshold. Some SamTrans routes operate along Ninth and 10th streets in the South of Market (SoMa) neighborhood over approximately five blocks on each street within the transportation study area. These are one-way streets with multiple travel lanes. Although the buses would experience a modest increase in vehicular traffic volumes due to the short extent of the route in this corridor, this would not result in a substantial increase in vehicular traffic congestion experienced by the buses and would not result in a significant impact related to transit delay. Therefore, implementation of the Hub Plan would not result in significant impacts related to transit delay. In addition, as discussed above for local transit, implementation of the Hub Plan's proposed streetscape and street network improvements would not result in potentially hazardous conditions for regional transit. Thus, for the reasons described above, the Hub Plan would not substantially delay Muni or regional transit and would not create potentially hazardous conditions. Transit impacts would be ***less than significant***.

30 Van Ness Avenue Project

As described in Approach to Analysis, beginning on p. 3.B-37, the 30 Van Ness Avenue project would generate 3,418 daily and 305 weekday p.m. peak-hour trips by transit. In addition, during the weekday p.m. peak hour, the 30 Van Ness Avenue project would generate 56 inbound and 126 outbound vehicle trips (total of 182 vehicle trips). The 56 inbound project vehicle trips would be substantially less than the 300 inbound p.m. peak-hour project vehicle trips identified by the department as the number of vehicle trips that could result in delays for transit and exceed the 4-minute threshold of significance. Therefore, the 30 Van Ness Avenue Project would not result in a significant impact related to transit delay.

The 30 Van Ness Avenue Project does not propose any driveways on Van Ness Avenue. Under 2020 baseline conditions, which include implementation of the Van Ness BRT/Improvement Project, both Muni and Golden Gate Transit bus routes would operate within the center median, and the existing curb bus stops on Van Ness Avenue would be discontinued. With implementation of the Van Ness BRT/Improvement Project, the existing curbside bus stop adjacent to the project site on northbound Van Ness Avenue north of Market Street would be replaced by a median platform on northbound South Van Ness Avenue south of Market Street. In the southbound direction, the nearest median platform would be located at the southbound Van Ness Avenue north of Market Street.

No Muni or regional transit routes operate on the segment of Fell Street adjacent to the site, and adequate commercial vehicle and passenger loading would be provided onsite and/or on the street on Van Ness Avenue and Fell Street. Therefore, the 30 Van Ness Avenue project would not create potentially hazardous conditions for public transit operators. For the reasons described above, the 30 Van Ness Avenue Project's transit impacts would be ***less than significant***.

98 Franklin Street Project

The 98 Franklin Street Project would generate 773 daily and 71 weekday p.m. peak-hour transit trips. In addition, during the weekday p.m. peak hour, the 98 Franklin Street project would generate 30 inbound and 19 outbound vehicle trips (total of 49 vehicle trips). The 30 inbound project vehicle trips would be substantially less than the 300 inbound p.m. peak-hour project vehicle trips identified by the department as the number of vehicle trips that could result in delays for transit and exceed the 4-minute threshold of significance. Therefore, the 98 Franklin Street project would not result in a significant impact related to transit delay.

No Muni or regional bus routes operate adjacent to the site on either Franklin or Oak streets, and adequate commercial vehicle and passenger loading would be provided onsite and/or on the street on Franklin and Oak streets. Therefore, the 98 Franklin Street Project would not create potentially hazardous conditions for public transit operators. For the reasons described above, the 98 Franklin Street Project's transit impacts would be ***less than significant***.

Impact TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people walking or otherwise interfere with accessibility for people walking to the project site or adjoining areas. (Less than Significant)

Hub Plan

Subsequent development under the Hub Plan would generate about 15,410 trips during the p.m. peak hour (i.e., 3,927 trips by transit and 11,483 trips by walking and other ways of travel). Trips by people walking would be dispersed throughout the Hub Plan area, with a greater proportion on streets south of Market Street where more development under the Hub Plan is projected to occur. Some of the subsequent development projects under the Hub Plan would include streetscape improvements to enhance conditions for people walking, as required under the *Better Streets Plan*.

Many Hub Plan streetscape and street network improvements include features that would improve the streetscape and street network for people walking. The changes would be designed consistent with the standards of the *Better Streets Plan*. Streetscape and street network changes that would enhance the environment for people walking, as well as accessibility, include opening sidewalks, increasing visibility, reducing vehicle speeds, widening sidewalks, and adding new signals. In addition to the transportation network changes, other streetscape amenities, such as public seating, landscaping, street trees, and lighting for people walking, would also be included. The boundaries of each streetscape and street network change are presented in **Figure 2-3**, p. 2-8, and a detailed description of the streetscape and street network improvements is provided in Chapter 2, Project Description, beginning on p. 2-32.

The plans for the proposed Hub Plan's transportation network and streetscape improvements would be refined as the design process progresses. As part of that work, a preliminary review would be conducted by SFMTA's Transportation Advisory Staff Committee (TASC) and the fire department, along with other City agencies. The proposed streetscape and street network improvements would not introduce unusual design features that would result in hazardous conditions for people walking.

- South Van Ness Avenue between Mission and 13th streets would be redesigned as a boulevard to enhance safety, provide vehicular traffic calming, and enhance the environment for people walking. The through travel lanes in each direction would be separated from frontage curbside lanes by planted medians. In addition, a new signalized crossing for people walking and sidewalk bulb-outs would be provided in the middle of the block. Sidewalk bulb-outs would also be provided at the intersection of South Van Ness Avenue/Mission Street/Otis Street/12th Street. The provision of a new signalized midblock crossing would enhance circulation and safety for people walking because it would substantially reduce the distance people walking would need to travel to cross the street.
- Duboce Avenue between Valencia and Mission streets and 13th Street between Mission and Folsom streets would be redesigned to improve safety and travel conditions for people walking and people bicycling by providing a bikeway between Valencia and Folsom streets, which would connect with the existing bikeway to the east on 13th Street. On Duboce Avenue, one westbound travel lane and the on-street parking on both sides of the street would be removed; on 13th Street, the vehicular parking and westbound service lane would be reorganized. On the north side of 13th Street, the currently closed sidewalk would be opened, and the sidewalk connection between Mission Street and South Van Ness Avenue would be improved. On the south side of 13th Street, a continuous sidewalk between Mission Street and South Van Ness Avenue would be provided, and the sidewalk would be widened.

- Wider sidewalks would also be provided on 12th Street between Market and Mission streets, Gough Street between Stevenson and Otis streets, South Van Ness Avenue between Mission and 13th streets, and Otis Street between South Van Ness Avenue and Gough Street as well as at the intersection of South Van Ness Avenue/Mission Street/Otis Street/12th Street.
- On Plum Street, between Mission Street and South Van Ness Avenue, a portion of the sidewalk would be widened to match the adjacent alignment and provide a consistent amount of space for people walking.
- Raised crosswalks and/or raised intersections would be created on multiple alley segments, including Lily Street between Franklin and Gough streets, Rose Street between Gough and Market streets, Lafayette Street between Mission and Howard streets, Minna Street between 10th and Lafayette streets, Stevenson Street between Brady Street and the dead end, and on Brady Street between Colton and Otis streets. A raised crosswalk would also be created across Woodward Street at Duboce Avenue. The raised crosswalks and intersections would provide a level area for people walking as they cross the street, and because vehicles must travel up and down over the raised crossing, vehicle travel speeds would be reduced. On most of these street segments, special paving would also be installed to further reinforce the right-of-way as a space for people walking.
- Colusa Place between Colton Street and Chase Court, and Chase Court between Colusa Place and the dead end would become shared streets, and Colton Street between Brady and Gough streets would become pedestrian-only streets. The shared street and pedestrian-only streets would have special paving. A shared street is a street that minimizes the segregation between ways of travel (e.g., vehicles, people walking and people bicycling, and other ways of travel). Shared streets have low vehicle travel speeds and volumes and reinforce their shared nature through materials and targeted design enhancements.
- Bulb-outs would be installed at Stevenson Street, 13th Street (southwest corner of the intersection of Folsom Street/13th Street), and on South Van Ness Avenue (northeast corner of South Van Ness Avenue/13th Street). Corner sidewalk bulb-outs would increase the visibility of people walking for drivers, thereby allowing drivers to begin braking farther in advance of the intersection to yield the right-of-way.

Overall, although subsequent development under the Hub Plan would increase the number of people walking on streets, the additional trips would not result in hazardous conditions for people walking. This is because Hub Plan's streetscape improvements would increase pedestrian visibility with bulb-outs and shared street treatments, reduce vehicle speeds at intersections with traffic calming measures, shorten pedestrian crossing distances, and expand pedestrian connectivity through additional crosswalks and sidewalk enhancements. The Hub Plan's streetscape and street network improvements would serve to accommodate the increase in the number of people walking and would not create potentially hazardous conditions or interfere with accessibility for people walking. Therefore, the impacts of the Hub Plan on people walking would be ***less than significant.***

30 VAN NESS AVENUE PROJECT

Access to the 30 Van Ness Avenue Project's residential lobby for people walking would be from Van Ness Avenue, while access to the office lobby would be from Market Street as well as Van Ness Avenue. A potential additional office lobby may be accessed from Fell Street. The proposed ground-floor retail uses would be accessed from both Van Ness Avenue and Market Street.

Adjacent to the project site, sidewalks on Van Ness Avenue would be between 12 and 16 feet, 6 inches wide; sidewalks on Fell Street would be 10 feet wide and would meet the minimum and recommended sidewalk width in the *Downtown Streetscape Plan* (i.e., recommended minimum of 10 feet for a commercial thoroughfare). The 30 Van Ness Avenue Project would include increasing the sidewalk width on Fell Street adjacent to the project site to create a corner bulb-out. At the curb on Van Ness Avenue, the project would provide a 20-foot-long no-parking zone directly south of the crosswalk to increase the visibility of people walking, a 41-foot long commercial loading space, and a 66-foot-long passenger loading zone. The sidewalk on Van Ness Avenue adjacent to the project site would be 16 feet wide. Street trees and planters, a wind sculpture, and bicycle racks would be located within the Van Ness Avenue furniture/curb zone (i.e., the area between the curb and the pedestrians through/walking zone). The Market Street sidewalk adjacent to the project site would not be changed and would remain at 33 feet, 9 inches wide.

Trips by people walking generated by the proposed project would include walking trips to and from the new uses, plus walking trips to and from transit stops on Van Ness Avenue and Market Street. During the weekday p.m. peak hour, the new uses would add about 792 new trips by people walking to the sidewalks and crosswalks in the vicinity of the project site (this includes about 305 trips to and from transit and 487 walking trips). The majority of the new trips by people walking would be between the project site and the transit stops on Market Street or within the Van Ness Avenue median; therefore, most trips by people walking would be added to the Van Ness Avenue sidewalk and crosswalks. The new trips by people walking would not substantially affect the sidewalk or crosswalk conditions in the project vicinity because all adjacent sidewalks would meet *Better Streets Plan* standards and would be of adequate width to accommodate these trips. In addition, the proposed widening of the sidewalk on Fell Street adjacent to the project site would enhance conditions for people walking and accessibility to the site.

The 30 Van Ness Avenue Project would provide a passenger loading/unloading zone on Van Ness Avenue and adequately accommodate people getting into and out of vehicles (see Impact TR-9, below). The 30 Van Ness Avenue Project's garage and loading dock access point would be on Fell Street, which has fewer people walking than on Market Street or on Van Ness Avenue. During the p.m. peak hour, vehicles entering and exiting the project garage are expected to arrive approximately one per minute (58 vehicles total) and two per minute (124 vehicles total), respectively. All three vehicles should be able to make their ingress or egress movement in that minute and people would be able to walk past the garage entrance without obstruction. The proposed garage would include visual and audible signals to alert passing drivers and people walking of an approaching exiting vehicle. Therefore, for the reasons described above, these project features would not result in potentially hazardous conditions to people walking along Van Ness Avenue or Fell Street and would not interfere with accessibility to the project site.

Overall, although the addition of project-generated trips by people walking would increase the volume of people walking on adjacent streets, the additional trips would not substantially affect the flow of people walking, and the project's streetscape changes and additional vehicle trips generated by the proposed land uses would not create potentially hazardous conditions or interfere with accessibility for people walking. Therefore, the 30 Van Ness Avenue Project's impacts on people walking would be ***less than significant.***

98 FRANKLIN STREET PROJECT

Access to the 98 Franklin Street Project's residential lobby for people walking would be from Oak Street, while access to the school lobby would be from Franklin Street. The proposed ground-floor retail uses would be accessed from Oak Street.

Adjacent to the project site, sidewalks on Oak Street are currently 15 feet wide but would be widened at the intersection of Franklin Street/Oak Street to 27 feet for a distance of approximately 55 feet. Sidewalks adjacent to the project site on Franklin Street are currently 9 feet wide but would be widened to 12 feet. In addition, at the intersection of Franklin Street/Oak Street, they would be widened an additional 8 feet for a total sidewalk width of approximately 20 feet. The proposed sidewalk widths would meet the minimum and recommended sidewalk widths in the *Better Streets Plan* (minimum width of 12 feet and recommended width of 15 feet for a commercial thoroughfare).

The proposed widening of the sidewalk on both Oak and Franklin streets at the southeast corner of the intersection of Franklin Street/Oak Street (i.e., adjacent to the project site) would enhance conditions and accessibility for people walking to the site. At the intersection of Franklin Street/Oak Street, continental crosswalks are provided on the east, west, and south legs of the intersection; however, the crossing of the north leg is closed to people walking to facilitate the vehicular left-turn movement (i.e., the three eastbound turn lanes) from eastbound Oak Street to northbound Franklin Street. The wider sidewalks at the corner would provide an additional area for people waiting to cross the south leg of the intersection. In addition, street trees on Franklin Street adjacent to the project site would be placed at least 25 feet south of the crosswalk to provide greater visibility of people walking by drivers on northbound Franklin Street.

New project-generated trips by people walking would include walking trips to and from the new uses as well as walking trips to and from transit stops. During the weekday p.m. peak hour, the new uses would add 166 new trips by people walking to the sidewalks and crosswalks in the vicinity of the project site (this includes about 71 trips to and from transit and 95 walking trips). In addition, existing trips by the 380 students who would be relocated from the existing school at 150 Oak Street to the new high school would be redistributed near the project site. For example, students walking along Oak Street from Van Ness Avenue would no longer cross Franklin Street to access the high school, while students arriving from the west would continue past the existing school and cross Franklin Street to access the project site. In addition, because drop-off and pickup of students by vehicle would continue to occur at the existing passenger zones on Oak and Hickory streets between Franklin and Gough streets, these students would now cross at the intersection of Franklin Street/Oak Street to access the new high school. The high school would deploy traffic crossing guards for all ways of travel (e.g., walking, bicycling, driving, skateboards, and scooters) on Franklin and Oak streets during school hours.

The majority of the new trips by people walking would be between the project site and the transit stops on Market Street or within the Van Ness Avenue median; therefore, trips by people walking would be added to both Franklin and Oak streets. The new trips by people walking would be accommodated on the wider sidewalks adjacent to the project site and would not substantially affect sidewalk or crosswalk conditions near the project site.

The 98 Franklin Street Project would provide a passenger loading/unloading zone on Oak Street and adequately accommodate people getting into and out of vehicles (see Impact TR-9, below). As noted above, drop-off and pickup for the high school students would continue to occur at the existing passenger zones on Oak and Hickory streets between Franklin and Gough streets. A short passenger loading/unloading zone accommodating one vehicle would be provided on Franklin Street per SFMTA recommendation; however, this zone would not be used for drop-off and pickup operations for the school, and instead would supplement the primary passenger loading zone on Oak Street. The 98 Franklin Street Project garage access would be on Franklin Street, which has fewer people walking on it than Oak Street. These 98 Franklin Street Project features would not result in potentially hazardous conditions for people walking on Franklin or Oak streets and would not interfere with accessibility to the project site.

Overall, although the addition of project-generated trips by people walking would increase the volume of people walking on adjacent streets, the additional trips would not substantially affect the flow of people walking, and the project's streetscape changes and additional vehicle trips generated by the proposed land uses would not create potentially hazardous conditions or interfere with accessibility for people walking. Therefore, the 98 Franklin Street Project's impacts on people walking would be ***less than significant.***

Impact TR-7. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people bicycling or otherwise interfere with bicycle accessibility. (Less than Significant)

HUB PLAN

Subsequent development associated with the Hub Plan would generate about 11,483 trips made by bicycling, walking, or other non-motorized ways of travel during the p.m. peak hour.[61] The new bicycle trips, which are a subset of this number, would use the existing system of bicycle routes and bicycle lanes. Within the transportation study area, bicycle lanes are currently provided on Market, Mission/Otis, McCoppin, Valencia, McAllister, Grove, Polk, 11th, Howard, Folsom streets for travel within and through the area. Features of subsequent development projects affecting the transportation network (e.g., driveway access, streetscape changes) would be required to undergo preliminary review with the department's Street Design Advisory Team (SDAT) as part of the project's environmental review application. In addition, streetscape changes would be required to undergo further review by SFMTA's TASC, along with other City agencies.

The Hub Plan streetscape and street network improvements include adding new protected bikeways on 13th Street and Duboce Avenue between Valencia and Folsom streets to enhance bicycle circulation and safety and improve connections with intersecting bicycle facilities on Folsom, Howard, and Valencia streets. In both the eastbound and westbound directions, new protected bikeways would be provided on 13th Street between Folsom and Mission streets and on Duboce Avenue between Mission and Valencia streets. In addition, the signal at the intersection of Otis Street/Mission Street/Duboce Avenue/13th Street would be revised to separate westbound vehicles and people bicycling from 13th Street to Duboce Avenue from vehicles exiting the Central Freeway off-ramp at Mission Street and continuing westbound onto Duboce Avenue.

The other Hub Plan streetscape and street network improvements primarily include features to enhance the streetscape and street network for people walking, such as wider sidewalks, bulb-outs, traffic islands, signals for people walking, changes to curb vehicular parking and loading, special paving, raised crosswalks, and midblock intersections. These types of street network improvements would increase visibility of people walking by drivers and bicyclists and reduce vehicle speeds, as appropriate; would be designed to accommodate bicyclists; and would also

---

61 Other nonmotorized ways of travel include walking and bicycling, as well as use of scooters and skateboards.

enhance conditions for bicycling. For these reasons, the street network improvements would not create hazardous conditions for people bicycling. Raised crosswalks and intersections would be provided primarily in alleys within the Hub Plan area, which have slower travel speeds and do not have dedicated bicycle facilities, and would be designed consistent with the *Better Streets Plan* to safely accommodate people bicycling. Proposed travel lane changes on 12th and Stevenson streets as well as South Van Ness Avenue would not interfere with bicycle accessibility in the area because there are no bicycle facilities on these street segments, and bicyclists would continue to have access to these streets. Thus, the Hub Plan streetscape and street network improvements would not create hazardous conditions for people bicycling or interfere with bicycle accessibility in the area.

As discussed above, subsequent development under the Hub Plan (i.e., not including individual development projects at 30 Van Ness Avenue and 98 Franklin Street) would generate new bicycle trips that would use the existing system of bicycle routes and bicycle lanes for travel within and through the transportation study area. The Hub Plan's streetscape and street network change would complete protected facilities on 13th Street. The streetscape and street network improvements would be designed consistent with *Better Streets Plan* standards to accommodate all ways of travel, and, as noted above, would be required to undergo further design review by SFMTA and other City agencies. Implementation of the Hub Plan streetscape and street network improvements on Duboce Avenue and 13th Street between Valencia and Folsom streets would provide a higher level of security for people bicycling by physically separating people bicycling from vehicular traffic. These and other Hub Plan streetscape and street network improvements would not create hazardous conditions for people bicycling or interfere with bicycle accessibility in the area for the reasons discussed above. Thus, for the reasons described above, the impacts of the Hub Plan on people bicycling would be ***less than significant.***

30 Van Ness Avenue Project

The 30 Van Ness Avenue Project would provide a total of 301 class 1 and 48 class 2 bicycle parking spaces. Of the 301 class 1 bicycle parking spaces, there would be 228 spaces for the residential uses, 70 spaces for the office uses, and three spaces for the retail uses. The 301 class 1 bicycle parking spaces would be provided within secure bicycle parking rooms in the basement and ground-floor levels, which would be accessed from the outside via the ground-floor entries on Van Ness Avenue and Market Street. The 76 class 2 bicycle parking spaces would be provided within 16 bicycle racks (i.e., 32 bicycle parking spaces) on Van Ness Avenue and 22 bicycle racks (i.e., 44 bicycle spaces) on Market Street, subject to SFMTA approval. In addition, the measures that would be implemented as part of the 30 Van Ness Avenue Project to comply with the TDM ordinance would also facilitate bicycling.

The project site is within convenient bicycling distance of residential and commercial uses in the surrounding neighborhoods, and is expected to generate 38 bicycle trips during the p.m. peak hour. The majority of project-generated trips would be made by walking, bicycling, or using transit or non-motorized ways of travel (about 76 percent during the weekday p.m. peak hour); the number of vehicle trips to and from the project site that could conflict with bicycle travel would be limited (e.g., 182 vehicle trips during the p.m. peak hour).

There are bicycle routes in the project vicinity, including bicycle lanes on Polk, Market, and 11th streets. Neither Van Ness Avenue nor Fell Street includes designated bicycle facilities. The 30 Van Ness Avenue Project would not include any curb cuts on either Van Ness Avenue or Market Street. Curbside commercial and passenger loading/unloading would occur on Van Ness Avenue and Fell Street and not on Market Street where there is a westbound bicycle lane adjacent to the project site. Proposed garage and loading access driveways on Fell Street would not create a new hazard or conflict with bicycling or bicycle accessibility because they would be designed consistent with *Better Streets Plan* standards to accommodate all ways of travel, including providing adequate turning radii into and out of the project site and sight distances. In addition, bicyclists would be able to travel eastbound on Fell Street similar to existing conditions.

Overall, although the 30 Van Ness Avenue Project would result in an increase in the number of vehicles and bicycles in the vicinity of the project site, this increase would not be substantial enough to affect bicycle travel or facilities in the area, create potentially hazardous conditions for people bicycling, or interfere with bicycle accessibility; therefore, for the above reasons, the impacts of the 30 Van Ness Avenue Project on people bicycling would be ***less than significant***.

98 Franklin Street Project

The 98 Franklin Street Project would provide a total of 489 class 1 and 50 class 2 bicycle parking spaces. Of the 489 class 1 bicycle parking spaces, 345 bicycle parking spaces would be for the residential uses, and 144 bicycle parking spaces would be for the school uses. All class 1 bicycle parking would be provided within basement level 1 and accessed from a separate ramp adjacent to the vehicular access ramp or the elevators in the residential and school building lobbies. A total of 50 class 2 bicycle parking spaces would be provided within 27 bicycle racks on Franklin and Oak streets, subject to SFMTA approval. In addition, the measures that would be implemented as part of the 98 Franklin Street Project to comply with the TDM ordinance would also facilitate bicycling.

The project site is within convenient bicycling distance of residential and commercial uses in the surrounding neighborhoods. As such, it is anticipated that the proposed project would generate seven bicycle trips during the p.m. peak hour (**Table 3.B-10**, p. 3.B-51). The majority of project-generated trips would be made by walking, bicycling, or using transit or non-motorized ways of travel (about 70 percent during the p.m. peak hour), and, therefore, the number of vehicle trips generated by the proposed project that could conflict with bicycle travel would be limited (e.g., 49 vehicle trips during the p.m. peak hour).

As described above, there are bicycle routes in the project vicinity, including bicycle lanes on Market, Polk, 11th, and Valencia Grove streets. Neither Franklin Street nor Oak Street is a designated bicycle facility. The proposed garage and loading access driveway on Franklin Street and the streetscape improvements on Franklin, Oak, and Lily streets would not create a new hazard or conflict with bicycling or bicycle accessibility because streetscape and street network improvements would be designed consistent with *Better Streets Plan* standards to accommodate bicycle travel, and because bicyclists would continue to be able to travel on these streets similar to existing conditions.

Overall, although the 98 Franklin Street Project would result in an increase in the number of vehicles and bicycles in the vicinity of the project site, this increase would not be substantial enough to affect bicycle travel or facilities in the area, create potentially hazardous conditions for people bicycling, or interfere with bicycle accessibility; therefore, for the above reasons, impacts of the 98 Franklin Street Project on people bicycling would be ***less than significant***.

Impact TR-8. The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off-street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people bicycling, or people walking. (Significant and Unavoidable)

Subsequent development projects under the Hub Plan would generate commercial and passenger loading demand that would need to be accommodated onsite (i.e., truck loading spaces, per planning code requirements) and/or within on-street curb loading spaces (i.e., yellow loading zones for commercial vehicles and white loading zones for passenger vehicles). With the proposed Hub Plan's rezoning and planning code changes, subsequent development projects within the Hub Plan area with more than 100,000 square feet of residential, commercial office, retail, and/or industrial uses would be required to develop and implement a Driveway and Loading Operations Plan (DLOP) to address project-generated commercial and passenger loading issues. The DLOP would require that offsite loading activity is considered in the design of new buildings. Applicable projects would prepare the DLOP in accordance with guidelines issued by the department, and the DLOP would be reviewed and approved by the department, in consultation with the SFMTA. Therefore, considering the DLOP requirements, it is anticipated that the majority of subsequent development projects under the Hub Plan would be able to provide onsite and/or on-street loading facilities to accommodate loading demand from commercial vehicles and passenger vehicles, and would not result in significant loading impacts. However, it is possible that some development sites and surrounding roadways may restrict the new curb cuts (e.g., along Market Street) and/or on-street commercial loading or passenger loading spaces may not be possible to provide, and existing spaces may not be located so as to accommodate the new demand. It is possible that an inadequate supply of off-street commercial loading spaces and/or on-street commercial loading and passenger loading spaces, particularly for larger buildings that could be developed under the Hub Plan, could disrupt circulation for transit, vehicles, people walking and people bicycling, and create potentially hazardous conditions.

The Hub Plan streetscape and street network improvements would not substantially change the existing on-street commercial loading supply within the parking and loading study area. There would be a net increase of five commercial loading spaces and four passenger loading spaces. On Rose Street between Gough and Franklin streets, and on Brady Street between Colton and Otis streets, new flexible commercial and passenger vehicle loading zones would be added. Some streetscape and street network improvements would include removal of on-street vehicular parking on some blocks, which may restrict the creation of new on-street commercial and/or passenger loading zones. Therefore, in some instances, subsequent development under the Hub Plan, even with preparation of a project-specific DLOP, may result in an inadequate supply of off-street commercial loading spaces and/or on-street commercial loading and passenger loading spaces, which could disrupt circulation for transit, vehicles, people bicycling, and people walking and create potentially hazardous conditions. Given the above, it is conservatively determined that implementation of the Hub Plan would result in ***significant impacts*** with respect to commercial and passenger loading within the Hub Plan area.

Mitigation Measures

There is no feasible mitigation available to reduce this impact.

Significance after Mitigation

Impacts of the Hub Plan on commercial and passenger loading would be ***significant and unavoidable.***

Impact TR-9. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would accommodate commercial vehicle and passenger loading demand. (Less than Significant)

30 Van Ness Avenue Project

The 30 Van Ness Avenue Project proposes a street-level loading dock that would accommodate three truck loading spaces (two 12 feet wide and 35 feet in length and one 10 feet wide and 25 feet in length) and three service vehicle loading spaces (8 feet wide and 20 feet in length). The loading dock would be accessed from Fell Street. Trash, recycling, and compost would be stored in separate bins within the loading dock area. In addition, the 30 Van Ness Avenue project sponsor would request accommodation of both commercial and passenger loading at Van Ness Avenue adjacent to the project site, and commercial loading on Fell Street adjacent to the project site. On Van Ness Avenue, the project sponsor would request one 41-foot-wide on-street commercial loading space and a 106-foot-wide passenger loading zone; on Fell Street, the project sponsor would request one commercial loading space. In addition, as part of the proposed project, an existing accessible vehicular parking space would be relocated from Van Ness Avenue to Fell Street. The passenger loading zone, which would be in effect all day, would accommodate taxis and TNC vehicles as well as private vehicles. The proposed on-street commercial spaces and passenger loading zones would require approval at a public hearing through SFMTA. Preliminary review of the proposed design and changes to the on-street curb regulations during the department's SDAT review, including with SFMTA Color Curb Program staff members, did not identify concerns with the proposed zones and confirmed that the proposed on-street curb regulations are consistent with SFMTA policy.

The Hub Plan's proposed planning code changes would include a requirement for subsequent development projects that provide more than 100,000 square feet of residential, commercial, or industrial uses to prepare and implement a Driveway and Loading Operations Plan and a Passenger Loading Plan. These related plans would specify how deliveries to the building as well as passenger loading/unloading activities would be accommodated within onsite and/or on-street loading spaces in such a way that would not result in conflicts with people bicycling, people walking, or vehicles on streets adjacent to project sites. The 30 Van Ness Avenue Project would be subject to this requirement.

- The 30 Van Ness Avenue Project would generate 142 delivery-/service-vehicle trips per day, which corresponds to a demand for eight loading spaces during the peak hour of loading activity. This loading demand would be accommodated within the proposed six onsite loading spaces and two on-street commercial loading spaces.

  Residential move-in and move-out activities are anticipated to occur from the onsite truck loading spaces. Trash, recycling, and compost bins, located in the loading dock area, would be accessed from Fell Street.

- The 30 Van Ness Avenue Project would also generate 110 passenger loading instances during the weekday p.m. peak hour, which corresponds to a demand for four passenger loading spaces at the project site. This passenger loading demand would be accommodated within the passenger loading zone on Van Ness Avenue (accommodating two or three vehicles) and the two on-street commercial loading spaces on Van Ness Avenue and Fell Street because private vehicles, taxis, and TNC vehicles would be permitted to stop and load or unload within the commercial loading spaces. Any passenger loading demand not accommodated within the on-street passenger loading zone and commercial loading spaces during the p.m. peak hour may result in double parking on Van Ness Avenue. However, considering that Van Ness Avenue does not have bicycle facilities and that transit would be operating within an exclusive center median (i.e., the Van Ness BRT Project) and not within the two travel lanes adjacent to the project site, the double parking of passenger vehicles adjacent to the project site during the p.m. peak hour would not result in delays to transit, affect bicycle accessibility, or create hazardous conditions.

The proposed onsite and on-street loading facilities for the 30 Van Ness Avenue Project would be enough to accommodate projected demand without creating hazardous conditions for people walking, bicycling, or driving or substantially delaying public transit. Thus, the 30 Van Ness Avenue Project would accommodate its commercial and passenger loading demand. The impacts of the 30 Van Ness Avenue Project related to loading would be ***less than significant***.

98 Franklin Street Project

The 98 Franklin Street Project proposes one truck loading space (10 feet wide and 25 feet in length) and two service vehicle loading spaces (8 feet wide and 20 feet in length) within garage/basement level 1, which would be accessed via the garage driveway on Franklin Street. Trash, recycling, and compost would be stored in separate bins onsite within a dedicated area in basement level 1; the bins would be accessed via the garage driveway on Franklin Street. In addition, the project sponsor would request accommodation of one on-street passenger loading space on Franklin Street to support special events at the school and an all-day combined passenger and commercial loading zone for four vehicles on Oak Street to support residential uses. This all-day commercial/passenger loading zone would accommodate private vehicles, taxis, and TNC vehicles. The proposed provision of on-street commercial and passenger loading spaces would require approval at a public hearing through SFMTA. Preliminary review of the proposed design and changes to the on-street curb regulations during the department's SDAT review, including with SFMTA Color Curb Program staff members, did not identify concerns with the proposed zones and confirmed that the proposed on-street curb regulations are consistent with SFMTA policy. In addition, as described above for the 30 Van Ness Avenue Project, the 98 Franklin Street Project would be required to prepare and implement a Driveway and Loading Operations Plan and a Passenger Loading Plan. These related plans would specify how deliveries to the building and passenger loading/unloading activities would be accommodated within onsite and/or on-street loading spaces in such a way that would not result in conflicts with people bicycling, people walking, or vehicles on Franklin and Oak streets.

- The 98 Franklin Street Project would generate about six delivery-vehicle/service-vehicle trips per day, which corresponds to demand for one loading space during the peak hour of loading activity. This loading demand would be accommodated within the three proposed onsite loading spaces and the four proposed shared commercial/passenger loading spaces on Oak Street.

  Residential move-in and move-out activities are anticipated to occur from the onsite truck loading spaces. However, larger residential moving trucks would be accommodated on the street on either Franklin or Oak streets by obtaining reserved curbside permits from SFMTA in advance of move-in or move-out activities.

As noted above, trash, recycling and compost bins would be accessed via the Franklin Street garage ramp. For trash/recycling/compost pickup, the property managers would cart the containers from the first basement level up the garage ramp to Franklin Street.

- The 98 Franklin Street Project would generate 23 passenger loading instances during the weekday p.m. peak hour, which corresponds to demand for one passenger loading space at the project site. This passenger loading demand would be accommodated at four proposed combined passenger and commercial loading spaces on Oak Street.

  This passenger loading does not include loading associated with school pickup or drop-off activity because the French-American International School would continue to direct families to conduct pickup and drop-off activities in their existing loading zones at 150 Oak Street. Consistent with the school's current drop-off and pickup plan, all students are dropped off or picked up at either the passenger zones on Oak Street between Franklin and Gough streets or on Hickory Street, also between Franklin and Gough streets.

Thus, the proposed onsite and on-street loading facilities for the 30 Van Ness Avenue Project would be sufficient to accommodate the projected demand. Therefore, no secondary impact analysis is necessary. Because the 98 Franklin Street Project would accommodate the commercial and passenger loading demand, impacts of the 98 Franklin Street Project related to loading would be ***less than significant***.

Impact TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in a substantial vehicular parking deficit. (Less than Significant)

HUB PLAN

Under existing zoning, subsequent development projects within the Hub Plan area would not be required to provide vehicular parking. Under the proposed Hub Plan zoning changes, vehicular parking controls for residential uses would be changed from the current maximum of 0.5 space per dwelling unit to a new maximum of 0.25 vehicular space per dwelling unit, with no conditional use authorization option. Maximum permitted commercial vehicular parking controls (i.e., 7 percent of occupied floor area)[62] would not change. The Hub Plan area is within the department's map-based screening area for the VMT analysis; therefore, subsequent land use development projects under the Hub Plan would not result in substantial vehicular parking deficits.

The proposed Hub Plan streetscape and street network improvements would include some removal and reconfiguration of on-street vehicular parking; however, the types of changes qualify as "active transportation rightsizing" (e.g., bikeway on 13th Street, median islands, shared alleys,

[62] The amount of parking spaces permitted for nonresidential (i.e., commercial) uses is limited to 7 percent of the occupied floor area.

wider sidewalks, raised crosswalks and intersections, special paving, reduction in travel lanes on 13th and Otis streets and on Duboce Avenue) or "other minor transportation project" (e.g., new traffic signal, conversion from one-way to two-way streets, removal of on-street vehicular parking, changes to curb vehicular parking and loading regulations) per the Senate Bill 743 checklist and planning commission resolution 19579, and therefore would not result in a substantial vehicular parking deficit. In total, approximately 135 general on-street vehicular parking spaces would be removed on streets where streetscape and street network improvements are proposed (i.e., 31 vehicle parking spaces within alleys, and 104 vehicle parking spaces on other streets).

Because the Hub Plan, including land use development and streetscape and street network improvements, would not result in a substantial vehicular parking deficit, no secondary impact analysis is necessary. Thus, for the reasons described above, the Hub Plan impacts related to vehicular parking would be ***less than significant***.

30 Van Ness Avenue Project

The 30 Van Ness Avenue Project would provide 243 vehicular parking spaces for 610 residential units and 371,000 square feet of commercial uses. The 30 Van Ness Avenue Project is within the department's map-based screening area and therefore would not result in a substantial vehicular parking deficit. Therefore, no secondary impact analysis is necessary. The impacts of the 30 Van Ness Avenue Project related to vehicular parking would be ***less than significant***.

98 Franklin Street Project

The 98 Franklin Street would provide 82 vehicular parking spaces for the 345 residential units and 29 spaces for the school uses. No vehicular parking would be provided for the 3,100 square feet of ground-floor retail uses. The 98 Franklin Street Project is within the department's map-based screening area and would not result in a substantial vehicular parking deficit. Therefore, no secondary impact analysis is necessary. The impacts of the 98 Franklin Street Project related to vehicular parking would be ***less than significant***.

Impact TR-11. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in inadequate emergency access. (Less than Significant)

Hub Plan

With implementation of the Hub Plan, including subsequent land use development and streetscape and street network improvements, emergency access would remain similar to existing conditions. Subsequent development projects under the Hub Plan would be required to undergo multi-departmental City review so that proposed vehicle access and streetscape improvements do not impede emergency access to the site or surrounding areas.

The proposed Hub Plan transportation network and streetscape improvements would be refined as the design process progresses. As part of that work, a preliminary review would be conducted by SFMTA's TASC and the fire department, along with other City agencies. In general, the proposed street network changes, listed below, would not introduce unusual design features that would substantially change, hinder, or preclude existing emergency access.

- Create a boulevard on South Van Ness Avenue between Mission Street/Otis Street and 13th Street to separate two lanes of vehicular traffic in each direction and form a third local lane with use of a side median. The local lane would be designed to be accessible to emergency vehicles. Implementation of the boulevard would require close coordination with and approval from Caltrans, which manages U.S. 101.
- Change street segments from one-way to two-way travel (i.e., Otis Street between McCoppin/Gough streets and Duboce Avenue/13th Street as well as Stevenson Street between Brady and Gough streets). The changes would not affect ability of emergency service providers to travel on these roadways. Conditions would be similar to conditions on other two-way streets in the area.
- Change alleys through use of raised crosswalks, raised intersections, and special paving; change curb vehicular parking and loading regulations. The width of the roadway would remain the same as under existing conditions. Emergency vehicles would be able to continue to access alleys, shared streets (Stevenson Street, Colusa Place, and Chase Court), and pedestrian-only alleys (Colton Street) as under existing conditions. The design of the raised crosswalks and intersections would be consistent with the *Better Streets Plan's* guidelines to accommodate emergency vehicle travel across the raised segments of the roadway safely.
- Widen sidewalks, open sidewalks, and create sidewalk bulb-outs. This would not affect adjacent travel lanes.

The proposed bikeway and safety improvements for people walking on 13th Street and Duboce Avenue would not affect adjacent travel lanes on 13th Street because adjacent travel lanes would not be affected. On Duboce Avenue, the removal of one of the three existing westbound travel lanes for the one-block segment (approximately 400 feet) of Duboce Avenue between Stevenson and Mission streets would not substantially affect traffic flow or emergency access on this segment because two travel lanes would be provided in each direction. Within the rest of the transportation study area, due to the presence of multiple travel lanes on many transportation study area streets, as well as the presence of bicycle lanes on some streets, vehicles would be able to pull over to the side of the street and provide a clear path when an emergency vehicle with lights and sirens approaches. Emergency vehicles are also permitted to use transit-only lanes (e.g., Market Street, Mission Street, Van Ness Avenue), if needed. Thus, for the reasons described above, the Hub Plan would not result in inadequate emergency access, and emergency access impacts would be ***less than significant***.

30 Van Ness Avenue Project

The 30 Van Ness Avenue Project would not introduce any design features that would change emergency vehicle travel adjacent to the project site. Emergency access to the 30 Van Ness Avenue project site would remain unchanged compared with existing conditions; access to the site would be from Van Ness Avenue, Market Street, and Fell Street. As part of the proposed 30 Van Ness Avenue Project, the project sponsor would request that passenger and commercial loading zones be located at the curb adjacent to the project site on Van Ness Avenue, which would be available to emergency service providers. Emergency service providers would continue to be able to pull up to the project site as well as other buildings on the project block from both Market and Fell streets, which contain multiple travel lanes. Drivers on these streets would be able to pull over to the side of the street and provide a clear path when an emergency vehicle with lights and sirens approaches. Therefore, the 30 Van Ness Avenue Project would not result in inadequate emergency access. For the reasons described above, the 30 Van Ness Avenue Project's emergency access impacts would be ***less than significant***.

98 Franklin Street Project

The 98 Franklin Street Project would not introduce any design features that would change emergency vehicle travel adjacent to the project site. Emergency access to the 98 Franklin Street project site would remain unchanged compared with existing conditions and continue to be from Franklin and Oak streets. The 98 Franklin Street Project's streetscape improvements adjacent to the project site at the intersection of Franklin Street/Oak Street (i.e., sidewalk widening into the adjacent vehicular parking lanes on Oak and Franklin streets) would be designed to maintain fire truck access to the project site as well as other buildings on the block of Oak Street between Franklin Street and Van Ness Avenue. Specifically, the travel lanes adjacent to the project site would have a minimum width of 20 feet to accommodate emergency vehicles, and emergency vehicles would be able to mount the raised crosswalk across Oak Street on the east leg of the intersection of Franklin Street/Oak Street. Fire department station 36 on Oak Street west of Franklin Street would continue to have eastbound contraflow access on the one-way westbound segment of Oak Street between Franklin Street and Van Ness Avenue, as under existing conditions.

The 98 Franklin Street Project would also implement streetscape improvements on Lily Street between Franklin and Gough streets. These improvements would be made only if the Planning Commission approves an in-kind fee waiver for the cost of the improvements and such improvements are approved by public works. The streetscape improvements would include raised crosswalks at the Franklin Street and Gough Street ends of the alley as well as a midblock raised intersection. In addition, high-quality roadway paving, bollards, and lighting for people walking would be installed. The design of the raised crosswalks and midblock intersection would be consistent with *Better Streets Plan* guidelines. The streetscape changes would be required to undergo review by SFMTA's TASC and the fire department, along with other City agencies. Therefore, the 98 Franklin Street Project would not result in inadequate emergency access. For the reasons described above, the 98 Franklin Street Project's emergency access impacts would be ***less than significant***.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative transportation impacts includes the sidewalks and roadways within the transportation study area. The discussion of cumulative transportation impacts assesses the degree to which the proposed project would affect the transportation network, in conjunction with overall citywide growth and other reasonably foreseeable projects, pursuant to CEQA Guidelines section 15355. The assessment of cumulative transportation conditions was based on planned transportation network changes, projected citywide land use changes, and associated changes in travel demand by 2040.

Impact C-TR-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts. (Significant and Unavoidable with Mitigation)

Construction associated with subsequent development under the Hub Plan, as well as the Hub Plan streetscape and street network improvements and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, may overlap with construction of other land development and public infrastructure projects within the transportation study area, although the extent of overlap for the majority of these projects cannot be determined at this time. Subsequent development under the Hub Plan would occur over time as individual projects are proposed and approved. Development projects, including those at 10 South Van Ness Avenue, 30 Otis Street, and 1500–1540 Market Street, that are currently approved, proposed, or under construction may be under construction at the same time as the proposed 30 Van Ness Avenue Project and 98 Franklin Street Project, and therefore, construction activities in the area may partially overlap. Although the scope of construction associated with the Hub Plan streetscape and street network improvements would be limited, generally lasting less than one year for most projects, the duration of construction for the Better Market Street Project would be substantially longer. Construction of the Better Market Street Project would be conducted in phases between Octavia Boulevard and Steuart Street over a period of six to 14 years, depending on the availability of funding. These construction activities would result in substantial disruptions for transit, people walking, and people bicycling along and near the Market Street corridor. Overall, localized cumulative construction-related transportation impacts could occur as a result of projects that either increase construction traffic at the same time and on the same roads as other land development projects or overlap public infrastructure projects that, because of construction-generated traffic, reduce the number of travel lanes on the local roadway network and increase the number of construction-related vehicle trips.

Given the magnitude of projected development and transportation/streetscape projects within the transportation study area, as well as the uncertainty concerning construction schedules, cumulative construction activities could result in multiple travel-lane closures, high volumes of trucks, and sidewalk closures, which, in turn, could disrupt or delay transit, people walking, or people bicycling or result in potentially hazardous conditions (i.e., high volumes of trucks turning at intersections). Despite the best efforts of the project sponsors and project construction contractors, it is possible that simultaneous construction of other projects could result in significant disruptions for transit, people walking, and people bicycling, even if each individual project alone would not result in significant impacts. In some instances, depending on construction activities, overlapping construction of two or more projects may not result in significant impacts. However, for conservative purposes, given the concurrent construction of multiple buildings and transportation projects in the transportation study area, some in proximity to each other; the expected intensity and duration; and the likely impacts on transit, people bicycling, and people walking, cumulative construction-related transportation impacts would be considered significant. As discussed in Impact TR-1, implementation of the Hub Plan would result in significant transportation-related construction impacts under baseline-plus-project conditions; therefore, the Hub Plan would contribute considerably to significant cumulative construction-related transportation impacts. In addition, construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, which would be in proximity to each other, would occur at the same time as construction of other development projects and contribute considerably to significant cumulative construction-related transportation impacts. This would be a significant impact.

MITIGATION MEASURES

Mitigation Measure M-TR-1, presented in Impact TR-1 above, addresses the potential for project overlap with other development and infrastructure projects. Because the 30 Van Ness Avenue Project and the 98 Franklin Street Project could overlap with construction of other approved and proposed projects and could contribute to significant cumulative construction-related transportation impacts, Mitigation Measure M-TR-1 would be applicable to these projects.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure M-TR-1 would minimize but would not eliminate significant cumulative impacts related to conflicts between construction activities and people walking and people bicycling, transit vehicles, and other vehicles. Other measures, such as imposing sequential (i.e., non-overlapping) construction schedules for all projects in the vicinity, were considered but deemed infeasible because of potentially lengthy delays in project implementation. Therefore, construction of subsequent development under the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in San Francisco, would contribute considerably to cumulative construction-related transportation impacts, which would remain ***significant and unavoidable with mitigation***.

Impact C-TR-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not cause substantial additional VMT or substantially induce automobile travel. (Less than Significant)

VMT by its very nature is largely a cumulative impact. Past, present, and future projects might cause people to drive and contribute to the physical secondary environmental impacts associated with VMT; however, it is likely that no single project by itself would be large enough to prevent the region or state from meeting its VMT reduction goals. Project-level thresholds for VMT and induced automobile are based on levels at which new projects are not anticipated to conflict with state and regional long-term targets regarding reductions in greenhouse gas and statewide targets set in 2020 regarding reductions in VMT per capita.

Daily VMT per capita for 2040 cumulative conditions without and with implementation of the Hub Plan were projected using a SF-CHAMP model run, developed with the same methodology outlined for baseline conditions but including residential and job growth estimates from identified and anticipated development projects through 2040 and the reasonably foreseeable transportation investments that are expected to occur through 2040. As shown on **Table 3.B-11**, p. 3.B-64, the projected VMT per capita and per employee under 2040 cumulative conditions for the TAZs in the Hub Plan area, including the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would be more than 15 percent below the regional average for the San Francisco Bay Area. Furthermore, as discussed in Impact TR-3, the Hub Plan would be consistent with the region's Sustainable Communities Strategy. Development under the Hub Plan, including the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in substantial additional VMT, and there would be no significant cumulative impact. Therefore, the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects, would result in ***less-than-significant*** cumulative impacts related to VMT.

Impact C-TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to traffic hazards. (Less than Significant)

Several transportation network projects are currently under way or planned that would enhance the transportation network in the transportation study area, particularly for people walking and people bicycling. These projects are described in **Table 3-2**, p. 3-17, and include the Better Market Street Project, Sixth Street Pedestrian Safety Project, Seventh Street Road Diet, Market and Octavia Plan, Hub Plan, Civic Center Plan, and Central SoMa Plan, among others not listed above. Other projects, including the Hub Plan streetscape and street network improvements, would be designed to meet City standards. Other development projects proposing street changes in the area would be subject to these requirements as well. Similar to the proposed project, these street changes would be designed consistent with City policies and design standards, including the *Better Streets Plan*, and would not result in significant cumulative impacts related to traffic hazards. Therefore, the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects, would result in ***less-than-significant*** cumulative impacts related to traffic hazards.

Impact C-TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative transit impacts. (Less than Significant)

Transportation network projects currently under way or planned that would enhance transit operations in the transportation study area include Muni Forward and the Better Market Street Project, in addition to those that would be completed by 2020, such as the Van Ness BRT Project and other Muni Forward projects. These projects would implement or enhance transit-only lanes on Van Ness Avenue and Market and Mission streets, thereby reducing conflicts between private vehicles and transit vehicles and improving transit vehicle travel times on those streets.

The Better Market Street Project includes multiple elements to improve transit operations along the Market Street project corridor. These include Muni-only lanes, private vehicle access restrictions, modifications to transit stop spacing, new transit stops, minor service changes, expansion of transit boarding islands, and a new F Market & Wharves historic streetcar loop, among others. The transit analysis conducted for the Better Market Street Project EIR did not identify any significant cumulative impacts on Muni or regional routes operating along Market Street or on streets crossing the Market Street project corridor within the Hub Plan transportation study area for either the proposed Better Market Street Project or Western Variant.[63]

---

[63] City and County of San Francisco, *Better Market Street Draft EIR*, February 2019, Case No. 2014.00126ENV.

Table 3.B-13 presents the results of the transit travel-time analysis conducted as part of this EIR for eight Muni routes under 2040 cumulative weekday p.m. peak-hour conditions (i.e., with the Hub Plan included). The table presents headways for routes under 2040 cumulative conditions (i.e., with implementation of the Muni Forward service changes approved for implementation by 2040), the significance threshold applicable to each route, and the transit travel-time changes from the 2020 baseline conditions. The 2040 cumulative transit operations analysis accounts for increased vehicular traffic within the transportation study area as well as increased transit ridership due to anticipated land use changes by 2040. As shown in **Table 3.B-13**, under 2040 cumulative conditions, transit travel times would increase along all routes compared with 2020 baseline conditions; however, these transit delays would not exceed the threshold of four minutes or half the headway applicable to each route and therefore would not result in significant cumulative impacts on these routes.

TABLE 3.B-13. MUNI TRANSIT OPERATIONS ANALYSIS – 2040 CUMULATIVE CONDITIONS – WEEKDAY P.M. PEAK HOUR

Route/Direction[a]	2040 Cumulative Headways (min:sec)	Threshold (half a headway or four minutes, whichever is less)	Travel Time Change from 2020 Baseline Conditions (min:sec)
5 Fulton – inbound	9:00	4:00	2:57
5 Fulton – outbound	9:00	4:00	1:32
5R Fulton Rapid – inbound	6:00	3:00	0:35
5R Fulton Rapid – outbound	6:00	3:00	0:40
9 San Bruno – inbound	12:00	4:00	2:07
9 San Bruno – outbound	12:00	4:00	0:30
9R San Bruno Rapid – inbound	8:00	4:00	0:05
9R San Bruno Rapid – outbound	8:00	4:00	0:03
14 Mission – inbound	15:00	4:00	0:05
14 Mission – outbound	15:00	4:00	0:53
14R Mission Rapid – inbound	8:00	4:00	0:08
14R Mission Rapid – outbound	8:00	4:00	0:07
19 Polk – inbound	10:00	4:00	0:03
19 Polk – outbound	10:00	4:00	0:03
21 Hayes – inbound	9:00	4:00	1:53
21 Hayes – outbound	9:00	4:00	2:08

Source: SFMTA, Fehr & Peers, 2019.

[a] Inbound direction generally means headed toward downtown San Francisco. It is the opposite of the outbound direction. Routes that do not go downtown have a consistent definition for inbound and outbound. For example, the 19 Polk is defined as heading inbound to the Marina and outbound to Hunters Point.

An objective of the Better Market Street Project is to enhance conditions for transit along Market Street, and therefore, its project elements were designed to not result in potentially hazardous conditions for transit operators. All adjacent development projects are required to comply with the *Better Streets Plan* standards and requirements and, therefore, would not result in potentially hazardous conditions for transit operators. As discussed above in Impact TR-5, the Hub Plan's streetscape and street network improvements would not include any features that would result in potentially hazardous conditions for transit operators.

SFMTA is currently conducting a Station Capacity Study at the Van Ness station. The study aims to evaluate existing and future passenger demand and capacity needs at the station, and recommend any needed physical improvements to increase the capacity of platforms, stairwells, and escalators in response to anticipated future growth in the number of riders at the station. In an ongoing study, SFMTA is considering the following improvements: building additional platform-to-mezzanine stairwells, widening existing platform-to-mezzanine stairwells, and pulling trains to the end of the platform so that passenger boarding/alighting can occur in areas where there is more space. Therefore, for the above reasons, implementation of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other reasonably foreseeable development projects and transportation changes anticipated by 2040, would result in ***less-than-significant*** cumulative transit impacts.

Impact C-TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts on people walking. (Less than Significant)

Several projects have been implemented, or are currently proposed, to enhance walking conditions within the transportation study area, described in **Table 3-2**, p. 3-17. Projects that include improvements to the street network for people walking are contained within the Better Market Street Project, Central SoMa Plan, Western SoMa Community Plan, Market and Octavia Area Plan, and the Sixth Street Pedestrian Safety Project, among others. Furthermore, as part of Vision Zero, SFMTA has been implementing projects that include sidewalk widening, new traffic signals, leading intervals for people walking at signalized intersections, continental crosswalk striping, corner sidewalk extensions, daylighting (i.e., restrictions on vehicular parking near corners to enhance visibility for people walking and drivers at intersections), and reductions in the number of travel lanes. Upcoming Vision Zero projects include improvements on Sixth, Seventh, Eighth, Folsom, and Howard streets. Development projects within the transportation study area would be required to comply with *Better Streets Plan* requirements.

Within the transportation study area, the proposed Better Market Street Project would generally keep the sidewalk the same width as under current conditions but add a dedicated sidewalk-level bicycle facility and a buffer and furnishings zone. The intersection of 12th Street/Page

Street/Franklin Street/Market Street would be reconfigured to include a corner bulb-out at the southwest corner. This would shorten the pedestrian crossing distance on Market Street's intersecting side street and increase the visibility of people crossing by placing them in the drivers' line of sight sooner. A new signal would be installed at the intersection of 11th Street/Market Street that would allow for a new marked crosswalk across Market Street where none currently exists. Vehicle access restrictions onto Market Street would reduce the number of vehicles turning across Market Street crosswalks. As part of the Better Market Street Project's Western Variant, sidewalks on both sides of Market Street between 12th and Polk streets would be widened to be between 22 and 26 feet in most locations. The additional sidewalk width would allow more space for people walking and queuing at transit stops. It would also provide additional space around the Muni Van Ness station. The Better Market Street Project's Western Variant would incorporate additional entrances to the Muni Van Ness station as part of future development projects if they are determined to be feasible. The wider sidewalks would reduce the crossing distance for people crossing Market Street at the intersections of Van Ness Avenue/South Van Ness Avenue/Market Street, 12th Street/Market Street, and 10th Street/Polk Street/Fell Street/Market Street. In addition, corner bulb-outs would be provided at the intersections of Valencia Street/Market Street and 12th Street/Market Street, which would also reduce crossing distances, crossing times, and the exposure of people walking to vehicular traffic. At the three intersections of Rose Street/Market Street, Brady Street/Market Street, and 12th Street/Market Street, the Better Market Street Project's Western Variant and the proposed project would provide raised crosswalks on Rose and Brady streets at Market Street. Pedestrian refuge zones between the bikeway and adjacent Muni, paratransit, and taxi lane on Market Street (included as part of the Better Market Street Project) would be provided at the intersections of Van Ness Avenue/South Van Ness Avenue/Market Street, 10th Street/Polk Street/Fell Street/Market Street, and Ninth Street/Larkin Street/Hayes Street/Market Street. These pedestrian refuge zones would provide an additional queuing area and result in people crossing a shorter distance during the walk phase by using the refuge.

The projected vehicular traffic volumes under 2040 cumulative conditions would result in an increase in the number of interactions between vehicles/people walking at intersections in the transportation study area; however, transportation projects such as Better Market Street and the Hub Plan streetscape and street network improvements would reduce this potential for conflicts. In combination with the planned and proposed streetscape and street network improvements under cumulative conditions, these increases in vehicular traffic volumes would not create potentially hazardous conditions for people walking or otherwise interfere with accessibility for people walking. For the reasons described above, significant cumulative walking/accessibility impacts would not occur. Therefore, the Hub Plan and individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in San Francisco, would result in ***less-than-significant*** cumulative impacts on walking/accessibility.

Impact C-TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative bicycle impacts. (Less than Significant)

Several bicycle projects are currently planned or being proposed, shown in **Table 3-2**, p. 3-17. These include the recently implemented separated bikeway projects on Polk, Valencia, and Eighth streets; planned separated bikeway projects along 11th and Seventh streets; and planned bike lane projects along Fifth Street. The Better Market Street Project proposed new separated bikeways on either side of Market Street between Octavia Boulevard and Steuart Street that would connect with bicycle facilities intersecting Market Street, as well as other bicycle improvements along the corridor. These bicycle projects would enhance cycling conditions in the transportation study area. In addition, the proposed bicycle facilities on Market Street, part of the Better Market Street Project, would connect with recently completed vehicular parking–protected bicycle lanes on upper Market Street between Octavia Boulevard and Duboce Avenue.

Within the transportation study area, the Better Market Street proposed project would place the bikeway on Market Street at sidewalk level, except at select locations between Valencia and 10th streets where the bikeway would be at street level. Two-stage left-turn queue boxes would be provided or improved at the intersections of Market Street with 10th Street/Polk Street, Eighth Street/Grove Street/Hyde Street, and Seventh Street. In addition, a new signal at the intersection of 11th Street/Market Street with a turn cut-out in the sidewalk to allow bicyclists to complete a two-stage turn would be provided, as well as bicycle signals and bikeway guideways to facilitate bicycle turns from westbound Market Street onto southbound 11th Street. The Better Market Street Western Variant would reduce the number of westbound travel lanes between Hayes/Larkin/Ninth streets and 12th Street from two travel lanes to one travel lane; in the eastbound direction, from 12th Street to 11th Street, the number of travel lanes would be reduced from two travel lanes to one travel lane. This would allow for a sidewalk-level bikeway facility in both directions between 11th and 12th streets.

In addition, the intersection of 11th Street/Market Street would be modified under the Better Market Street Western Variant in several ways that would affect bicycle access. The north side of Market Street between Van Ness Avenue and a point approximately 300 feet to the east would be redesigned to provide an expanded sidewalk. People bicycling westbound from 11th Street would be directed to an alternate route on Mission Street and onto westbound Otis Street. In addition, the westbound bicycle left turn from Market Street would be moved from 11th Street to Van Ness Avenue to allow people bicycling to cross Market Street at a perpendicular angle to the streetcar rails. The intersection of 11th Street/Market Street would continue to have a minor stop-sign control. In addition, the Western Variant would include reconfiguration of the intersection at Franklin, Market, and 12th streets in order to incorporate the bicycle-only connection between Page and Market streets, which would require changes to signal equipment, phasing, and/or timing. This reconfiguration would remove access for vehicles turning from westbound (outbound) Market Street to Franklin or Page streets. In addition, under the Better Market Street Western Variant, 12th Street would change so that northbound vehicles would be forced to turn left onto westbound (outbound) Market Street only.

Although the number of bicycle trips may increase because of land use growth in the transportation study area, transportation projects such as the Better Market Street Project would serve to accommodate the increase in the number of people bicycling. Under 2040 cumulative conditions, the projected increase in the number of vehicles on study area streets, in combination with planned and proposed improvements to the bicycle network and expanded bicycle use, is not anticipated to result in potentially hazardous conditions for people bicycling or otherwise interfere with bicycle accessibility. The bicycle infrastructure projects currently being implemented, planned, or proposed in the transportation study area would accommodate future growth in the number of people bicycling and would not result in significant cumulative bicycle impacts. Therefore, for the above reasons, the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in San Francisco, would result in ***less-than-significant*** cumulative impacts on people bicycling.

Impact C-TR-7. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative loading impacts. (Significant and Unavoidable)

Within the transportation study area, numerous transportation and land use projects would affect commercial and passenger loading conditions, shown in **Table 3-2**, p. 3-17. The proposed Better Market Street Project would not result in a substantial change in the number of loading zones along Market Street; however, the existing zones would be reconfigured to sidewalk-level loading zones, and some may be relocated to other blocks within the Market Street corridor. In addition, the number of commercial loading spaces on cross and side streets north and south of Market Street along the Better Market Street project corridor would be increased. The locations for the new on-street commercial loading spaces was based on a review of known projects and street network changes. The on-street commercial loading spaces implemented by the Better Market Street Project would not be eliminated as part of future development projects or street configuration changes. Within the transportation study area, regarding the new loading bays that would be created by the Better Market Street Project, both the proposed project and Western Variant would shorten the bay on the north side of Market Street between 12th Street and Van Ness Avenue, provide four new loading bays between 11th and Eighth streets, and lengthen two and shorten one bay between Ninth and Seventh streets. In addition, the Western Variant would restrict the three loading bays on the north side of Market Street between Hayes and 12th streets to just paratransit vehicles and taxis. As discussed in Impact TR-8, above, under baseline-plus-project conditions, the Hub Plan streetscape and street network improvements would not substantially modify the existing on-street commercial or passenger loading supply within the transportation study area. Other transportation projects, such as the proposed Civic Center Public Realm Plan and the approved Muni Forward rapid transit network projects, would remove on-street commercial loading and general vehicular parking spaces and could restrict the ability to provide on-street commercial and passenger loading spaces.

Other subsequent land use development projects, including the 18 sites affected by the proposed rezoning under the Hub Plan and other development projects adjacent to the Hub Plan area, would generate both commercial and passenger loading demand. It is anticipated that all or a portion of the commercial loading demand would be accommodated within the development site. However, the cumulative effect of the removal of on-street curb spaces as part of other transportation projects, as described above, may be the inability to provide new on-street commercial and/or passenger loading zones to support loading demand associated with future development. Therefore, subsequent development projects, in combination with other development projects adjacent to the Hub Plan area, may result in an inadequate supply of off-street commercial loading spaces and/or on-street commercial loading and passenger loading spaces, which could result in disruptions to transit vehicles, other vehicles, people bicycling, and people walking and create potentially hazardous conditions. This would be considered a significant cumulative commercial and passenger loading impact.

As described in Impact TR-8, under baseline-plus-project conditions, to the extent that loading demand associated with subsequent development under the Hub Plan is not accommodated onsite or within existing or planned on-street commercial loading spaces, double parking and the illegal use of sidewalks and other public spaces are likely to occur, with associated disruptions for transit vehicles, other vehicles, people bicycling, and people walking, and create potentially hazardous conditions. Thus, for these reasons, the proposed Hub Plan would contribute considerably to significant cumulative commercial and passenger loading impacts. This would be a significant impact.

MITIGATION MEASURES

There is no feasible mitigation available to reduce this impact.

SIGNIFICANCE AFTER MITIGATION

The Hub Plan, in combination with past, present and reasonably foreseeable future projects in San Francisco, would contribute considerably to cumulative loading impacts, which would remain ***significant and unavoidable***.

Impact C-TR-8. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not contribute considerably to significant cumulative loading impacts. (Less than Significant)

Commercial vehicle and passenger loading/unloading impacts of development projects are by their nature localized and site-specific impacts and generally do not contribute to impacts from other development projects outside of the project site. As described in Impact TR-9, above, under baseline-plus-project conditions, both the 30 Van Ness Avenue Project and the 98 Franklin Street Project would accommodate their respective commercial and passenger loading demand within onsite loading spaces and within on-street curb loading zones and would not create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay transit. No other development or transportation projects have been identified that would contribute to either commercial vehicle or passenger loading demand or affect supply within or adjacent the project sites. Therefore, the 30 Van Ness Avenue Project and the 98 Franklin Street Project would not contribute considerably to the significant cumulative loading impacts identified in Impact TR-8, above. Thus, because the 30 Van Ness Avenue Project and the 98 Franklin Street Project would not contribute considerably to significant cumulative commercial and passenger loading impacts, the 30 Van Ness Avenue Project's and the 98 Franklin Street Project's contribution to cumulative loading impacts would be ***less than significant***.

Impact C-TR-9. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative vehicular parking impacts. (Less than Significant)

Over time, because of the land use development and increased density anticipated within the city, vehicular parking demand and competition for on- and off-street vehicular parking spaces is likely to increase. Within the transportation study area, the development projects projected to occur under the Market and Octavia Plan and the Hub Plan are anticipated to result in a substantial increase in residential development. Some of the new developments in these areas would include new off-street vehicular parking facilities; however, the parking ratios per unit for these developments would be much lower than historical requirements of a minimum of one vehicle parking space per unit. In addition, through implementation of the City's Transit First Policy, Vision Zero, and *Better Streets Plan*; related projects, such as the Better Market Street Project; as well as the streetscape and street network improvements included in the Hub Plan, existing on-street vehicular parking may be further removed to promote alternative ways of travel and sustainable street designs. These projects would encourage transit use through a reduction in transit travel times, encourage bicycle use through the provision of separate bicycle facilities that would offer a higher level of security than bicycle lanes and make them attractive to a wider spectrum of people, and enhance walking conditions.

As discussed in Impact TR-10, under baseline-plus-project conditions, the Hub Plan area is entirely within the department's map-based screening area, and therefore, subsequent land use development projects under the Hub Plan, including the 30 Van Ness Avenue Project and the 98 Franklin Street Project, would not result in substantial vehicular parking deficits.

Although the Hub Plan streetscape and street network improvements would remove some existing on-street vehicular parking, the total amount would be limited (i.e., approximately 135 spaces) and spread out among numerous streets (104 spaces) and alleys (31 spaces) and would not represent a substantial portion of the vehicular parking supply shortfalls that would occur over time. Therefore, considering the location of the Hub Plan area, with its dense pattern of urban development, multiple ways of travel, as well as proposed improvements to the streetscape and street network for transit, people walking and bicycling, a substantial vehicular parking deficit would not occur under cumulative conditions. Therefore, for the above reasons, the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in San Francisco, would result in ***less-than-significant*** cumulative vehicular parking impacts.

Impact C-TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to emergency access. (Less than Significant)

As discussed in Impact TR-11, above, under baseline-plus-project conditions, with implementation of the Hub Plan, emergency access would remain similar to existing conditions. Subsequent development projects within and adjacent to the Hub Plan area, and the Hub Plan streetscape and street network improvements would not introduce any features that would impede or hinder emergency access. The Better Market Street Project would generally maintain four travel lanes on Market Street, including the proposed Muni-only lanes, to access incidents along the corridor or at other destinations. Within the transportation study area, the Better Market Street proposed project would maintain the existing travel lane configuration between Octavia Boulevard and Van Ness Avenue, while the Western Variant would narrow the roadway width and reduce the number of travel lanes for the segment of Market Street between Larkin/Hayes and 12th streets to one westbound and one eastbound travel lane. However, under both the Better Market Street proposed project and Western Variant, multiple travel lanes would still remain for emergency vehicles to bypass the F Market & Wharves historic streetcar and Muni buses. In addition, this segment is not the part of the primary access routes for the fire department's station 36 (located on Oak Street between Franklin and Gough streets). Other transportation network projects may result in travel lane reductions (e.g., Civic Center Plan street network changes, Seventh Street Road Diet Project); however, multiple travel lanes would be provided on affected streets for drivers to pull over to the side of the street and provide a clear path when an emergency vehicle with lights and sirens approaches; therefore, the projects would not substantially affect emergency access in the transportation study area. For these reasons, under 2040 cumulative conditions, there would not be significant cumulative impacts related to emergency access. Therefore, for the above reasons, the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in San Francisco, would result in ***less-than-significant*** cumulative impacts related to emergency access.

This Page Intentionally Left Blank

3.C Noise and Vibration

Introduction

This section describes the existing noise and vibration environment in the Hub Plan area and evaluates the potential noise and vibration impacts of the Hub Plan,[1] the two individual development projects, and the Hub Housing Sustainability District (HSD) and identifies mitigation measures to avoid or reduce adverse impacts. The City and County of San Francisco (City) received no comments related to noise on the notice of preparation (NOP) (Appendix A) issued for the Hub Plan, the two individual development projects, and the Hub HSD.

Environmental Setting

The following section includes an introduction to the key concepts and terms that are used in the evaluation of noise and vibration. The environmental setting of the Hub Plan area and a description of the existing noise and vibration environment are also included below.

Noise and Vibration Definitions and Scales

A brief description of the noise and vibration concepts and terminology used in this document is summarized below.

- **Sound**. A vibratory disturbance transmitted by pressure waves through a medium such as air or water that is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. The dBA scale is the most widely used for environmental noise assessment.
- **Ambient.** The lowest sound level repeating itself during a specified period, usually a minimum of a 10-minute period. The minimum sound level is usually determined with the noise source at issue silent and from the same location where the noise level of the source or sources at issue was measured. Under most conditions, the level of noise exceeded 90 percent of the time (L_{90}) is a conservative representation of ambient conditions.

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

- **Maximum Sound Levels (L_{max}).** The maximum sound level measured during a given measurement period.
- **Equivalent Sound Level (L_{eq})**. The equivalent steady-state sound level containing the same total acoustical energy as a time-varying signal over a given sample period. L_{eq} is typically computed over 1-, 8-, and 24-hour sample periods. The 1-hour A-weighted equivalent sound level (1-hour LA_{eq}) is the energy average of A-weighted sound levels occurring during a 1-hour period.
- **Day-Night Average Sound Level (L_{dn} or LDN).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with a 10 dB penalty added to sound levels between 10 p.m. and 7 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the sound levels occurring during the period from 7 p.m. to 10 p.m. and 10 dB added to the sound levels occurring during the period from 10 p.m. to 7 a.m. L_{dn} and CNEL are typically within 1 dB of each other and interchangeable for the purposes of this environmental impact report (EIR).
- **Exceedance Level (L_n).** The A-weighted noise levels that are exceeded 1 percent, 10 percent, 50 percent, and 90 percent (L_{01}, L_{10}, L_{50}, L_{90}, respectively) of the time during the measurement period.
- **Root-Mean-Square.** Ground-borne vibration can be quantified by the root-mean-square velocity amplitude. The root-mean-square amplitude is expressed in terms of VdB, a metric that is typically used to assess human annoyance.
- **Vibration Velocity Level (or Vibration Decibel Level, VdB).** The root-mean-square velocity amplitude for measured ground motion expressed in dB.
- **Peak Particle Velocity (PPV).** A measurement of ground vibration, defined as the maximum speed at which a particle in the ground is moving, expressed in inches per second (in/sec).

Overview of Noise

Sound Fundamentals

Sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called “A-weighting,” expressed as “dBA.” The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. Because sound can vary in intensity by more than 1 million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level by approximating a range of sensitivity that extends from 0 to approximately 140 dBA. A 10 dB increase (in A-weighted decibels) in the level of a continuous noise represents a perceived doubling of loudness. With respect to vehicular traffic noise, a 3 dB increase is barely perceptible to people, while a 5 dB increase is readily noticeable. An increase of less than 3 dB is generally not perceptible outside of controlled laboratory conditions.[2] Traffic noise typically produces a noticeable increase in noise (i.e., 3 decibels) when there is a doubling of the existing traffic volumes on a roadway.

Noise is generally defined as sound that is loud, disagreeable, unexpected or unwanted. Sound is mechanical energy transmitted in the form of a wave by a disturbance or vibration that causes pressure variation in air detectable by the human ear. Variations in noise exposure over time are typically expressed in terms of a steady-state energy level (called L_{eq}) that represents the acoustical energy of a given measurement or, alternatively, a statistical description of the sound level exceeded during some fraction (10, 50, or 90 percent) of a given observation period (i.e., L_{10}, L_{50}, L_{90}). "L_{eq} (24)" is the steady-state acoustical energy level measured over a 24-hour period. Because many receptors are more sensitive to noise at night, a 24-hour noise descriptor, called the day-night noise level (L_{dn}), adds an artificial 10 dB increment to nighttime noise levels (10 p.m. to 7 a.m.) to add more weight to nighttime noise when calculating average (24-hour) noise levels. **Table 3.C-1** presents representative noise sources and their corresponding noise levels in dBA at varying distances from the noise sources.

Noise may also be described in terms of its tonality. Tonal noise is defined as noise containing a prominent frequency and characterized by a definite pitch. It may be associated with the whine of an industrial fan or the hum emanating from an electricity transformer. A source that emits continuous or, in certain circumstances, intermittent or cyclical tonal noise may disturb sleep or result in other health-related impacts. For tonal noise, a 5 dB penalty is often applied to the noise level.

NOISE FROM MULTIPLE SOURCES

Because the measurement of sound pressure levels in decibels is based on a logarithmic scale, decibels cannot be added or subtracted in the usual arithmetical way. Adding a new noise source to an existing noise source, with both producing noise at the same level, will not double the noise level. For instance, if two identical noise sources each produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. **Table 3.C-2** demonstrates the result of adding noise from multiple sources.

---

[2] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, *https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/references/rtcref/ch2.6/2014-12-19_Caltrans_TrafficNoiseAnalysisProtocol_Part1.pdf*, accessed July 9, 2018.

TABLE 3.C-1. TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT

Examples of Common, Easily Recognized Sounds	Decibels (dBA)	Subjective Evaluations
Nearby jet engine	140	Deafening
Threshold of pain	130	
Threshold of feeling – hard rock band	120	
Accelerating motorcycle at a few feet away[a]	110	
Loud automobile horn (10 feet away)	100	Very loud
Noisy urban street	90	
Noisy factory	85[b]	
School cafeteria with untreated surfaces	80	Loud
Near freeway vehicular traffic	60	Moderate
Range of speech	50–60	
Average office	50	
Soft radio music in apartment	40	Faint
Average residence without stereo playing	30	
Average whisper	20	Very faint
Rustle of leaves in wind	10	
Human breathing	5	
Threshold of audibility	0	

Source: U.S. Department of Housing and Urban Development, *The Noise Guidebook*, Chapter 1, Figure 1, p. 1, March 2009, *https://www.hudexchange.info/resource/313/hud-noise-guidebook/*, accessed October 30, 2018.

a. Fifty feet from motorcycle equals noise at about 2,000 feet from a four-engine jet aircraft.

b. Continuous exposure above this level is likely to degrade the hearing of most people.

TABLE 3.C-2. RULES FOR COMBINING SOUND LEVELS BY DECIBEL ADDITION

When two decibel values differ by…	…add the following amount to the higher decibel value	Example
0 to 1 dB	3 dB	60 dB + 61 dB = 64 dB
2 to 3 dB	2 dB	60 dB + 63 dB = 65 dB
4 to 9 dB	1 dB	60 dB + 69 dB = 70 dB
10 dB or more	0 dB	60 dB + 75 dB = 75 dB

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, *http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf*, accessed: October 5, 2018.

ATTENUATION OF NOISE

Noise attenuates (decreases) with distance. Roadway noise tends to be arranged linearly such that roadway vehicular traffic attenuates at a rate of 3.0 dB to 4.5 dB per doubling of distance from the source, depending on the intervening surface (paved or vegetated, respectively).[3] Point sources of noise, such as stationary equipment or construction equipment, typically attenuate at a rate of 6.0 dB to 7.5 dB per doubling of distance from the source.[4] For example, a sound level of 80 dBA at 50 feet from the noise source will be reduced to 74 dBA at 100 feet, 68 dBA at 200 feet, and so on. Noise levels can also be attenuated by shielding the noise source or providing a barrier between the source and the receptor. With respect to the transmission of exterior noise to interior environments, noise attenuation effectiveness depends on exterior wall insulation, the window sound transmission class rating, and whether windows are closed or open. Sound transmission class ratings indicate how well wall, ceiling, floor, door, or window assemblies attenuate airborne sound. It is not, however, a measure of how many decibels of sound a wall can stop. For example, an exterior wall with a sound transmission class 45 rating does not result in a 45 dB reduction in exterior-to-interior sound transmission. However, generally the higher the sound transmission class rating, the more sound is attenuated.[5]

The age of a structure is not necessarily a reliable predictor of the amount of attenuation an exterior can provide. Residential structures have a wide range of noise reduction due to differences in materials, building techniques, and individual building plans. Typical residential buildings would reduce noise from outside to inside in the range of 24 to 27 dB (with an average of 25 dB) with windows closed and 12 to 18 dB (with an average of 15 dB) with windows open.[6] Based on the typical residential buildings that exist within San Francisco, an assumption of a 25 dB noise reduction with windows closed and 15 dB noise reduction with windows open is reasonable.[7]

HEALTH EFFECTS OF NOISE

Human sensitivity to noise is generally a function of three measurable physical qualities: loudness, pitch, and duration. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The health effects of noise can be

---

[3] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September 2013,*https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/references/rtcref/ch2.6/2014-12-19_Caltrans_TrafficNoiseAnalysisProtocol_Part1.pdf*, accessed July 9, 2018.

[4] The 1.5 dB variation in attenuation rate (6 dB vs. 7.5 dB) can result from ground-absorption effects, which occur as sound travels over soft surfaces such as soft earth or vegetation (7.5 dB attenuation rate) versus hard ground such as pavement or very hard-packed earth (6 dB rate).

[5] There is not a straightforward linear relationship between increasing sound transmission class and a reduction of exterior to interior noise because the amount of reduction varies considerably with the frequency range of noise.

[6] Governor's Office of Planning and Research, *State of California 2017 General Plan Guidelines*, Appendix D: Noise Element Guidelines, page 378, 2017, *http://opr.ca.gov/docs/OPR_Appendix_D_final.pdf*, accessed May 5, 2019.

[7] Ibid.

organized into six broad categories: short- and long-term hearing loss; sleep interference; speech/audio interference; interference with communication; various physiological effects, such as pain, increases in heart rate and blood pressure, and increased production of stress hormones; and annoyance. Hearing loss can occur with exposure to high levels of noise (115 dB or more) for periods of 15 minutes or less. Long-term or permanent hearing loss may result from the cumulative effects of exposure to temporary high noise levels. Permissible or acceptable levels of noise exposure, as established by the Occupational Health and Safety Administration, are provided in **Table 3.C-3**.

Sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if the background noise level is low. Thus, sleep disturbance would not occur with a bedroom window slightly open (a reduction of noise from outside to inside of 15 dB), with exterior continuous (ambient) nighttime noise levels of 45 dBA or less, and exterior short-term noise of 60 dBA or less. 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.

TABLE 3.C-3. PERMISSIBLE NOISE EXPOSURE

Duration per Day (Hours)	Sound Level[a] (dBA, Slow Response)[b]
8	90
6	92
4	95
3	97
2	100
1.5	102
1.0	105
0.5	110
0.25 or less	115

Source: California Department of Transportation, Division of Environmental Analysis, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September, 2013.

a. When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered rather than the individual effect of each.

b. *Slow response* refers to averaging 1-second increments to calculate the L_{eq} of sound levels, as opposed to averaging the 0.125-second increments that occur with fast-response measurements.

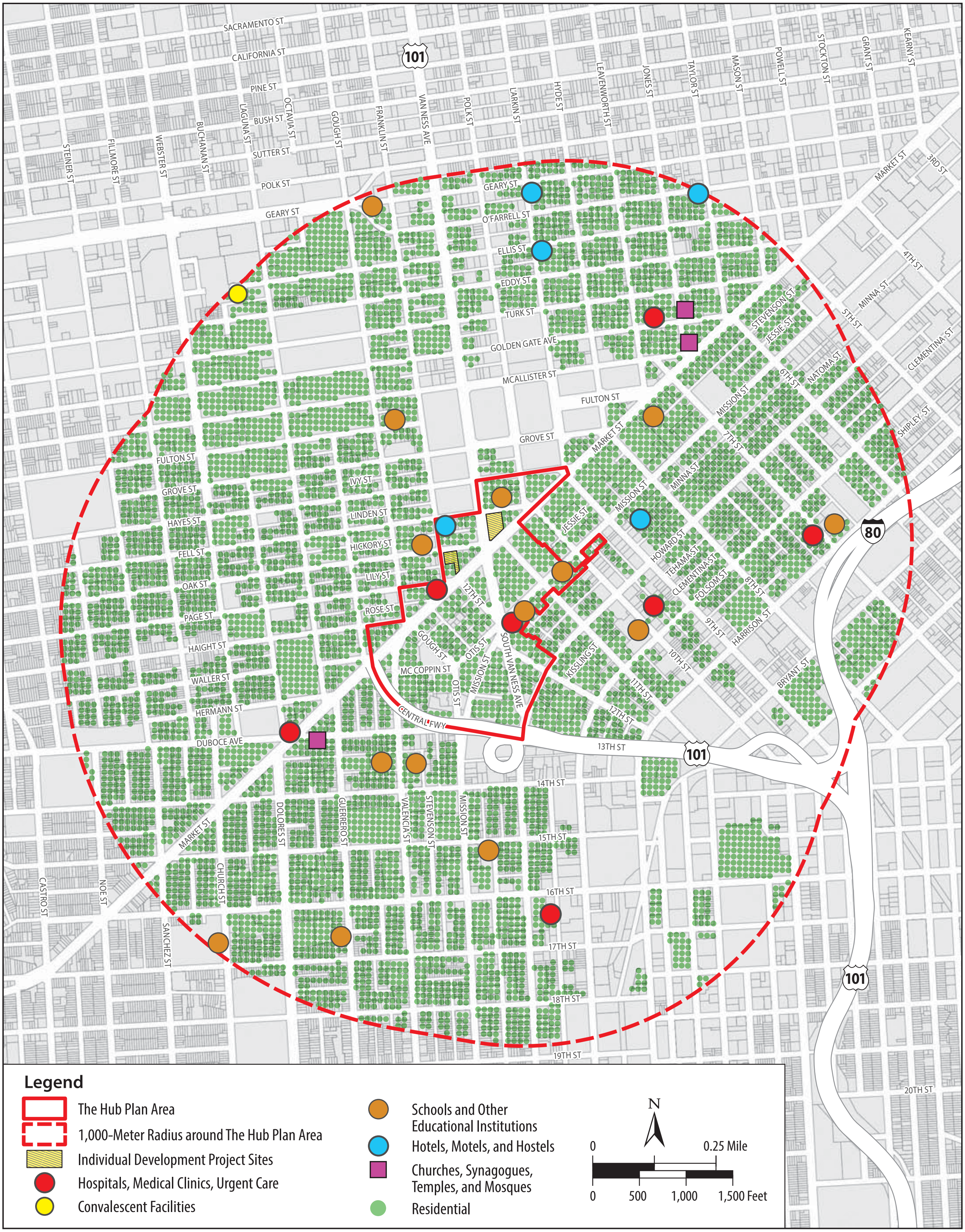
The World Health Organization has identified other potential health effects of noise, including decreased performance for complex cognitive tasks, such as reading, problem solving, and memorization; physiological effects, such as hypertension and heart disease; and hearing impairment. Noise can disrupt face-to-face communication and telephone communication as well as the enjoyment of music and television in the home. It can also disrupt effective communication between teachers and pupils in schools and other places, such as theaters, auditoriums, hospitals, or nursing homes, and cause fatigue and vocal strain in those who communicate in spite of the noise.

Finally, noise can cause annoyance and trigger emotional reactions, such as anger, depression, and anxiety. During daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, and few people are moderately annoyed with noise levels below 50 dBA. For short-term conditions (such as those occurring over a period of a few hours on a single day or over a period of a few days), such reactions are considered welfare rather than health effects. Were such conditions to persist (such as for construction projects with daily construction activities occurring for a number of hours in a row over a period of many days, many weeks, or longer), the long-term effects of annoyance may be considered a health impact.

NOISE-SENSITIVE RECEPTORS

Some land uses contain receptors that are more sensitive to noise impacts than others. Consistent with the Governor's Office of Planning and Research's *General Plan Guidelines 2017*, noise-sensitive receptors are defined as residential land uses, hospitals, convalescent homes, schools, churches, and sensitive wildlife habitat (e.g., habitat for nesting birds, habitat for marine mammals, as well as habitat for rare, threatened, or endangered species).[8] In addition, this analysis considers hotels and motels to be noise-sensitive receptors. As noted, sensitivity to noise may vary with the source of noise and land use context. Human reaction to a new noise environment may be predicted by comparing it with the existing ambient noise level. In general, the more a new noise source exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. Existing noise-sensitive land uses in the Hub Plan area, including in the vicinity of the individual development projects, are shown in **Figure 3.C-1** and include residences (mostly multi-family units), hotels or other transient lodging, schools, churches, and childcare facilities.

[8] Governor's Office of Planning and Research, *State of California 2017 General Plan Guidelines,* p. 136, 2017, *http://www.opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf*, accessed January 3, 2019.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.C-1
Noise Sensitive Receptors in the Hub Plan Area and Vicinity

Overview of Vibration and Ground-borne Noise

Vibration and Ground-borne Noise

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Construction-related vibration primarily results from the use of impact equipment such as pile drivers (both impact and vibratory), hoe rams, vibratory compactors, and jack hammers, although heavily loaded vehicles may also result in substantial ground-borne vibration. Operations-related vibration results primarily from the passing of trains, buses, and heavy trucks. Vibration is measured by PPV, defined as the maximum instantaneous peak of the vibration signal in inches per second. PPV is the metric typically used to describe vibration from sources that may result in structural stresses in buildings.[9] Ground-borne vibration can also be quantified by the root-mean-square velocity amplitude, which is useful for assessing human annoyance. The root-mean-square amplitude is expressed in terms of VdB, a metric that is sometimes used in evaluating human annoyance resulting from ground-borne noise and vibration.

The operation of heavy construction equipment, particularly pile-drivers and other heavy-duty impact devices (such as pavement breakers), creates seismic waves that radiate along the surface of the ground and downward. These surface waves can be felt as ground vibration and result in effects that range from annoyance for people to damage to structures. Ground-borne vibration generally attenuates rapidly with distance from the source of the vibration. This attenuation is a complex function of how energy is imparted into the ground as well as the subsurface soil and/or rock conditions through which the vibration is traveling. Variations in geology can result in different vibration levels, with denser soils generally resulting in more rapid attenuation over a given distance. The effects of ground-borne vibration on buildings include movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Ground-borne noise is the rumbling sound generated by the vibration of building surfaces such as floors, walls, and ceilings that radiate noise from the motion of the room surfaces.[10] Ground-borne noise can also occur because of the low-frequency components from a specific source of vibration, such as a rail line.

Vibration traveling through typical soil conditions may be estimated at a given distance by the following formula, where PPV_{ref} is the reference PPV at 25 feet:[11]

$$PPV = PPV_{ref} \times (25/distance)^{1.5}$$

---

9 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*. FTA Report No. 0123, 2018, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed December 31, 2018.

10 Ibid.

11 Ibid.

The background vibration velocity level in residential areas is usually 50 VdB or lower. The vibration velocity level of perception for humans is approximately 65 VdB, and human response to vibration is not usually substantial unless the vibration exceeds 70 VdB.[12] Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are heavy construction equipment, steel-wheeled trains, and vehicular traffic on rough roads. Ground-borne noise and vibration are the most significant problems for tunnels that are under residential areas or other noise-sensitive structures.

Vibration-Sensitive Receptors

Receptors that are sensitive to vibration include structures (especially older masonry structures), older utilities, people (especially residents, the elderly, and the sick), and equipment (e.g., magnetic resonance imaging equipment, high-resolution lithographic, optical, and electron microscopes).[13] In addition, vibration may disturb nesting and breeding activities for certain biological resources. The primary vibration-sensitive receptors in the Hub Plan area are older structures (potentially susceptible to damage) and people (susceptible to vibration-related annoyance, especially during nighttime hours).

High levels of vibration can damage fragile buildings. Depending on the age and condition of the structure and the type of vibration (transient, continuous, or frequent intermittent sources), vibration levels as low as 0.025 to 0.5 in/sec PPV can damage historic and older buildings.[14]

Regarding the potential effects of ground-borne vibration and noise for people, except for long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. People may tolerate infrequent, short-duration vibration levels, but human annoyance to vibration becomes more pronounced if the vibration is continuous or occurs frequently.

Existing Noise Sources

Ambient noise in urban areas is typically dominated by vehicular traffic on local roadways. The existing ambient noise environment in the Hub Plan area (including in the vicinity of the two individual development projects) is characterized by vehicular traffic traveling on major roadways (such as Market Street, Van Ness Avenue, etc.), San Francisco Municipal Railway

---

[12] Ibid.

[13] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*. FTA Report No. 0123, 2018, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed December 31, 2018.

[14] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, Table 9, p. 23, September 2013, *http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf*, accessed December 30, 2018.

(Muni) bus and light-rail train activity, and construction activities in the vicinity of the Hub Plan area.

The San Francisco General Plan includes an adopted transportation noise map of the city, based on modeled baseline vehicular traffic volumes derived from the San Francisco County Transportation Authority Travel Demand Model and the Federal Highway Administration (FHWA) Traffic Noise Model.[15] The map indicates the modeled L_{dn} noise on each street in the city. As shown on the map, noise levels from transportation sources along most of the major roadways in the Hub Plan area (Market Street, Franklin Street, Van Ness Avenue, etc.) are in excess of 70 L_{dn}.[16] However, some of the smaller or less-used streets in the Hub Plan area, such as parts of Hickory Street and Otis Street, have lower noise levels that are in the 65 to 70 L_{dn} range.

Noise Measurement Survey

As described above, noise-sensitive land uses in the Hub Plan area consist of residences (mostly multi-family), hotels or other transient lodging, schools, churches and childcare facilities. The existing ambient noise environment in the Hub Plan area is characteristic of an urban environment (e.g., highway and local vehicular traffic, light-rail operations, people walking, aircraft overflights, commercial noise). Noise from vehicular traffic on the major roadways, such as Market Street, Mission Street, and Van Ness Avenue, is the dominant noise source in the Hub Plan area.

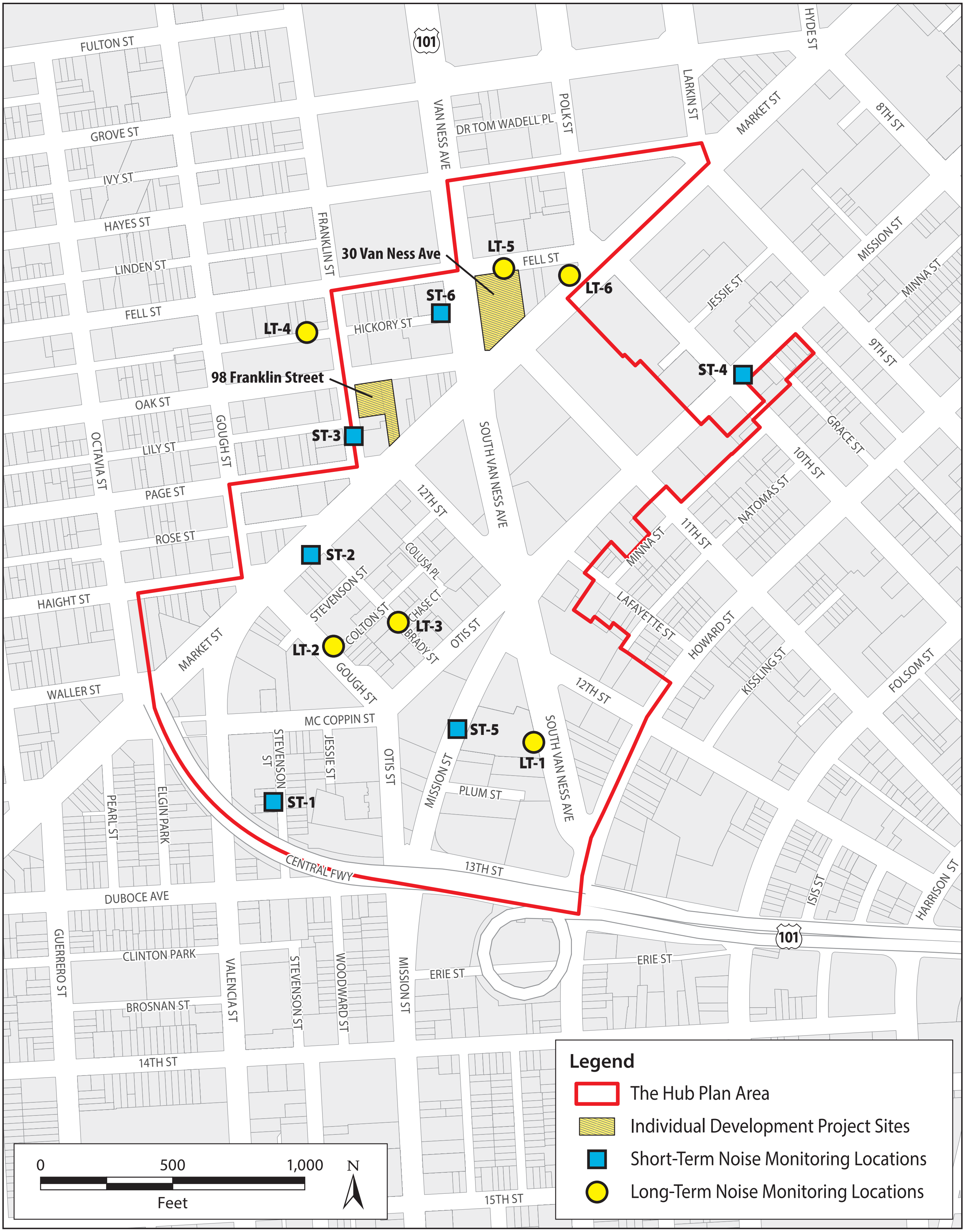
To quantify existing ambient noise levels in the Hub Plan area, long-term (24-hour) and short-term (15-minute) ambient noise measurements were conducted between Tuesday, June 19, and Wednesday, June 20, 2018. Measurements were conducted at locations within and adjacent to the Hub Plan area. Short- and long-term measurement locations were selected to capture noise levels in areas that are sensitive to noise or representative of ambient levels in the Hub Plan area throughout the day.

The locations of the noise measurement sites are shown in **Figure 3.C-2**. **Table 3.C-4,** p. 3.C-13, and **Table 3.C-5**, p. 3.C-15, summarize the results of the noise measurement survey. As noted above, existing noise levels in the Hub Plan area are generally relatively loud, with all long-term measurements being in excess of 70 L_{dn}. For the complete dataset of measured noise levels, please refer to Appendix E.

---

15 San Francisco Planning Department, *San Francisco General Plan Environmental Protection Element: Map 1* Background Noise Levels – 2009, *http://generalplan.sfplanning.org/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf*, accessed February 25, 2018.

16 Ibid.



ICF Graphics ... 00700.17 (3-13-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.C-2
Noise Measurement Locations

TABLE 3.C-4. LONG-TERM NOISE LEVEL MEASUREMENTS IN AND AROUND THE HUB PLAN AREA

			Measured L_{dn}	Highest-hour L_{eq}	Lowest-hour L_{eq}	Measured 12-hour Daytime L_{eq}[a]
Site	**Site Description**	**Date and Time**	**Tues.–Wed. 06/19–06/20**	**Tues.–Wed. 06/19–06/20**	**Tues.–Wed. 06/19–06/20**	**Tues.–Wed. 06/19–06/20**
LT-1	Located in the southern portion of the Hub Plan area along South Van Ness Avenue, north of Plum Street and south of Mission Street, adjacent to multi-family residential housing complex.	Start: Tuesday June 19, 2018, at 10:09 a.m. End: Wednesday June 20, 2018, at 1:09 p.m.	79.1	76.8	68.0	74.5
LT-2	Located along Gough Street at Colton Street, near single-family residential homes.	Start: Tuesday June 19, 2018, at 9:53 a.m. End: Wednesday June 20, 2018, at 12:53 p.m.	74.7	76.0	60.0	67.7
LT-3	Located along Brady Street between Colton Street and Otis Street, near multi-family residential homes.	Start: Tuesday June 19, 2018, at 10:23 a.m. End: Wednesday June 20, 2018, at 1:23 p.m.	67.0	68.6	52.9	65.3
LT-4	Located northeast of the Hub Plan area along Hickory Street, west of Franklin Street and north of International High School.	Start: Tuesday June 19, 2018, at 9 a.m. End: Wednesday June 20, 2018, at 1 p.m.	71.6	74.3	61.0	68.0

TABLE 3.C-4. LONG-TERM NOISE LEVEL MEASUREMENTS IN AND AROUND THE HUB PLAN AREA

			Measured L_{dn}	Highest-hour L_{eq}	Lowest-hour L_{eq}	Measured 12-hour Daytime L_{eq}[a]
Site	**Site Description**	**Date and Time**	**Tues.–Wed. 06/19–06/20**	**Tues.–Wed. 06/19–06/20**	**Tues.–Wed. 06/19–06/20**	**Tues.–Wed. 06/19–06/20**
LT-5	Located in the northwest portion of the Hub Plan area along Fell Street, east of Van Ness Avenue, across from multi-family residences and a Montessori School.	Start: Tuesday June 19, 2018, at 8:40 a.m. End: Wednesday June 20, 2018, at 12:40 p.m.	77.8	76.9	64.4	74.6
LT-6	Located in the northwest portion of the Hub Plan area along Market Street west of Polk Street, adjacent to the New Central Hotel and Hostel.	Start: Tuesday June 19, 2018, at 9:32 a.m. End: Wednesday June 20, 2018, at 1:32 p.m.	79.2	77.0	65.1	73.9

Note: See Appendix E for detailed noise data.

LT = long-term (24-hour/multi-day) ambient noise measurement.

[a] Measured 12-hour daytime L_{eq} is for the 12 normal working hours (7 a.m. to 7 p.m.) for construction in the city.

TABLE 3.C-5. SHORT-TERM NOISE LEVELS MEASUREMENTS NEAR THE HUB PLAN AREA

				Measured Noise Level (dBA)		
Site	**Site Description**	**Date and Time**	**Primary Noise Sources**	L_{eq}	L_{max}	L_{min}
ST-1	Located in the southwest portion of the Hub Plan area along Stevenson Street, south of McCoppin Street, adjacent to multi-family residential land uses near U.S. 101.	June 20, 2018, at 10:26 a.m.	Construction noise along McCoppin, intermittent helicopter and other aircraft noise, as well as minor vehicle and motorcycle pass-by noise. Some light talking from people walking near the measurement equipment.	63.3	84.8	49.7
ST-2	Located along Market Street southwest of Brady Street, near multi-family residential land uses, a hotel, and commercial land uses.	June 20, 2018, at 9:54 a.m.	Trolley and Muni noise as well as relatively consistent vehicular noise, including horns, truck backup alarms, and sirens. Some light talking from people walking near the measurement equipment.	71.3	83.4	58.9
ST-3	Located along Franklin Street between Lily Street and Page Street, in front of multi-family residences and commercial uses.	June 19, 2018, at 10:52 a.m.	Vehicular traffic and other noise, including horns, truck backup alarms, and doors slamming. Some light talking from people walking near the measurement equipment.	70.6	83.9[a]	55.6
ST-4	Located in the eastern portion of the Hub Plan area along Mission Street, just east of 10th Street, near single-story vehicular parking lot as well as multi-family and commercial land uses.	June 19, 2018, at 1:20 p.m.	Vehicular traffic and other noise, including horns, truck backup alarms, and motorcycles revving. Some light talking from people walking near the measurement equipment. Garage gate near measurement location opened once or twice during measurement.	68.1	78.2	56.5

TABLE 3.C-5. SHORT-TERM NOISE LEVELS MEASUREMENTS NEAR THE HUB PLAN AREA

Site	Site Description	Date and Time	Primary Noise Sources	Measured Noise Level (dBA)		
				L_{eq}	L_{max}	L_{min}
ST-5	Located in the southern portion of the Hub Plan area along Mission Street, in front of a multi-family residential building.	June 20, 2018, at 11 a.m.	Vehicular traffic and other noise, including horns, idling engines truck backup alarms, and doors slamming. Some light talking from people walking near the measurement equipment.	68.5	85.5	61.6
ST-6	Located in the northern portion of the Hub Plan area along Hickory Street, immediately west of Van Ness Avenue, near a multi-family residential building commercial and office land uses.	June 19, 2018, at 12:39 p.m.	Vehicular traffic and other noise, including horns and tires squealing. Some loud voices captured by the meter as well as noise generated from people walking near the measurement equipment.	67.6	80.1	59.3

Note: See Appendix E for detailed noise data.

ST = short-term (approximately 15-minute) ambient noise measurement.

[a] Although the actual L_{max} during this 15-minute measurement window was a five-second-long L_{max} of 85.0 to 92.1 dBA, this was due to a long and very loud truck horn honk near the measurement location. An L_{max} of 83.9 dBA, which occurred during normal traffic conditions without the addition of this truck horn noise, is reported in this table in order to not overestimate noise in the ST-3 area.

REGULATORY FRAMEWORK

FEDERAL GUIDELINES

There are no federal regulations that apply to the Hub Plan, the two individual development projects, or the Hub HSD. Instead, this section identifies federal guidelines related to noise and vibration.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

The U.S. Department of Housing and Urban Development has set guidelines for acceptable noise levels in residential areas that include a goal (not a standard) for interior noise levels not to exceed 45 dBA L_{dn}.[17] The guidelines for acceptable ambient noise levels are specified in Code of Federal Regulations title 24, part 51, and are as follows:[18]

- Acceptable – 65 dBA L_{dn} or less, all projects may be approved
- Normally unacceptable – Above 65 dBA L_{dn} but not exceeding 75 dBA L_{dn}, require mitigation measures; each project needs to be individually evaluated for approval or denial
- Unacceptable – Above 75 dBA L_{dn}, require mitigation measures and the approval of the assistant secretary for community planning and development or certifying officer

FEDERAL TRANSIT ADMINISTRATION

The Federal Transit Administration (FTA) has developed general assessment criteria for analyzing construction noise. This assessment is based on the simultaneous operation of the two noisiest pieces of equipment. The general assessment criteria for construction noise limits are summarized in **Table 3.C-6**.

TABLE 3.C-6. FTA GENERAL ASSESSMENT CRITERIA FOR CONSTRUCTION NOISE

	1-hour L_{eq} (dBA)	
Land Use	**Day**	**Night**
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2018, FTA Report No. 0123, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed: December 31, 2018.

[17] U.S. Department of Housing and Urban Development, *The Noise Guidebook*, p. 12, *https://www.hudexchange.info/resource/313/hud-noise-guidebook/*, accessed December 30, 2018.

[18] Code of Federal Regulations, title 24, Housing and Urban Development, part 51, Environmental Criteria and Standards, subpart B, Noise Abatement and Control, section 51.103(c).

State Regulations

This section identifies state guidelines and regulations related to noise and vibration.

Title 24 of the California Code of Regulations, Noise Insulation Standards

California Code of Regulations title 24, part 2, Sound Transmission, establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under this regulation, interior noise levels attributable to exterior noise sources cannot exceed 45 dB in any habitable room. The noise metric is either the L_{dn} or the CNEL, consistent with the environmental protection element of the general plan (discussed below). Compliance with title 24 interior noise standards occurs during the permit review process and generally protects a proposed project's users from existing ambient outdoor noise levels. If determined necessary, a detailed acoustical analysis of exterior wall and window assemblies may be required.

California Department of Transportation

The California Department of Transportation (Caltrans) provides guidelines regarding vibration associated with construction and operation of transportation infrastructure. **Table 3.C-7** provides Caltrans' vibration guidelines for potential damage to different types of structures.

Table 3.C-7. Caltrans Vibration Guidelines for Potential Damage to Structures

	Maximum Peak Particle Velocity (PPV, in/sec)	
Structure Type and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Extremely fragile historic buildings	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation, Transportation and Construction Vibration Guidance Manual, Table 19, September 2013, http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf, accessed: October 30, 2018.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Ground-borne vibration and noise can also disturb people, who are generally more sensitive to vibration during nighttime hours when sleeping than during daytime waking hours. Numerous studies have been conducted to characterize the human response to vibration. **Table 3.C-8** provides Caltrans' guidelines regarding vibration annoyance potential (expressed here as PPV).

TABLE 3.C-8. CALTRANS GUIDELINES FOR VIBRATION ANNOYANCE POTENTIAL

	Maximum PPV (in/sec)	
Human Response	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation, Transportation and Construction Vibration Guidance Manual, Table 19, September 2013, Table 20, http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf, accessed: October 30, 2018.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

LOCAL REGULATIONS, PLANS, AND POLICIES

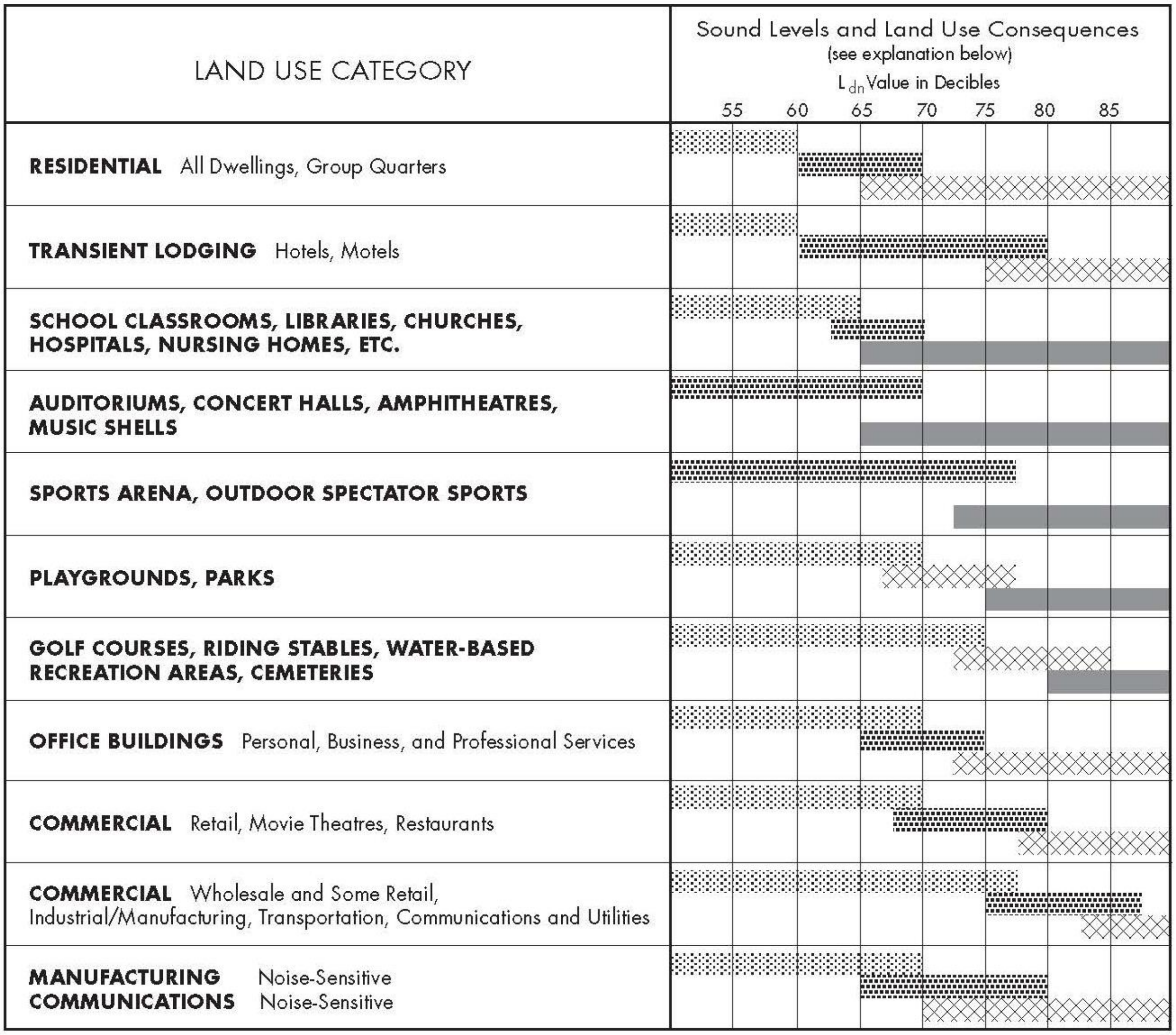
This section identifies noise and vibration regulations and guidelines applicable to projects within the city.

SAN FRANCISCO GENERAL PLAN

The San Francisco General Plan contains policies for avoiding or ameliorating noise in the city. Policy 11.1 of the environmental protection element includes the General Plan Land Use Compatibility Chart for Community Noise (see **Table 3.C-9**), which displays acceptable, conditionally acceptable, conditionally unacceptable, and unacceptable noise levels for a variety of land uses in the city. The land use compatibility chart provides guidance as to when, depending on the existing background noise level and the type of land use proposed for a development, a detailed analysis of noise reduction requirements should be made and noise insulation features should be included in the design of a project. According to these guidelines, the maximum "satisfactory, with no special insulation requirements" exterior noise level for residential land uses, including transient lodging such as hotels, is approximately 60 dBA L_{dn}. For office and most commercial land uses, the maximum "satisfactory, with no special insulation requirements," exterior noise level is 70 dBA L_{dn}.[19] For residential and hotel uses, a detailed analysis of noise reduction measures is required by title 24. The general plan guidelines are shown in full in **Table 3.C-9**.

[19] These limits reflect California's title 24 interior noise standard of 45 dBA and an assumption that structures generally attenuate exterior-to-interior sound by about 25 dB.

TABLE 3.C-9. SAN FRANCISCO GENERAL PLAN LAND USE COMPATIBILITY GUIDELINES



Satisfactory, with no special noise insulation requirements.

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

New construction or development should generally not be undertaken.

San Francisco Noise Ordinance

In the city, the regulation of noise is addressed in article 29 of the Police Code (the noise ordinance), which affirms a policy to prohibit unnecessary, excessive, and offensive noises. Section 2900 makes the following declaration about community noise levels: "In order to protect public health, it is hereby declared to be the policy of San Francisco to prohibit unwanted, excessive, and avoidable noise. It shall be the policy of San Francisco to maintain noise levels in areas with existing healthful and acceptable levels of noise and to reduce noise levels, through all practicable means, in those areas of San Francisco where noise levels are above acceptable levels, as defined by the World Health Organization's Guidelines on Community Noise" (essentially the same as the Land Use Compatibility Chart discussed above under the San Francisco General Plan).

Construction Noise

Construction noise includes noise from equipment involved in demolition, site preparation, rough framing, and finish work. Section 2907 of the noise ordinance, enforced by the Department of Building Inspection (for construction on private property) and San Francisco Public Works (public works) (for City-sponsored projects), regulates construction noise. Section 2907(a) limits noise from a single piece of construction equipment to 80 dBA when measured at a distance of 100 feet from such equipment or an equivalent sound level at some other convenient distance (such as 86 dBA at a distance of 50 feet). Section 2907(b) provides exemptions to the section 2907(a) limit for impact tools and other equipment (e.g., jack hammers, hoe rams, pile drivers), provided they are fitted with intake and exhaust mufflers and the acoustically attenuating shields or shrouds recommended by their manufacturers and approved by the Director of Public Works (for public works projects) or the Director of Building Inspection (for construction on private property) for maximum noise attenuation. Section 2908 of the noise ordinance prohibits nighttime construction (i.e., between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dB at the nearest property plane, unless a special permit has been granted by the Director of Public Works or the Director of Building Inspection.

Operational Noise

Section 2909 of the noise ordinance, enforced by the health department during the day and the police department during the night, provides limits on stationary-source noise and generally prohibits noise levels from any machine, device, music or entertainment venue (or any combination of same) as follows:

a) For residential properties, no more than 5 dB above the local ambient noise level, as measured at any point outside the property plane;

b) For commercial and industrial properties, no more than 8 dB above the local ambient noise level, as measured at any point outside the property plane; and

c) For public property, no more than 10 dB above the local ambient noise level at a distance of 25 feet or more from the noise source (unless the noise source is being operated to serve or maintain the property or as otherwise provided in the noise ordinance).

The criteria provided in section 2909(a)–(c) are limits for specified locations (i.e., the property plane or, for public properties, 25 feet from the noise source) and do not refer to a receptor location. Section 2909(d) establishes a maximum noise level from fixed noise sources (e.g., mechanical equipment) of 55 dBA during the daytime hours (7 a.m. to 10 p.m.) and 45 dBA during the nighttime hours (10 p.m. to 7 a.m.) inside any sleeping or living room in any dwelling unit on residential property to prevent sleep disturbance with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

The noise ordinance contains additional limits for specific types of noise sources, such as trash compactors.[20]

Impacts and Mitigation Measures

This section provides the impact analysis related to noise and vibration for the Hub Plan and the individual development projects. It describes the methods used to determine the impacts of the Hub Plan and the individual development projects and lists the criteria used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

Implementation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations but would not require additional California Environmental Quality Act (CEQA) analysis. Because the Hub HSD would be a procedural change that would be shown as an overlay on zoning maps, no impacts would result from implementation of the HSD beyond those identified for the Hub Plan, and this project component is not discussed further.

[20] For more information, see the San Francisco Department of Public Health, *San Francisco Police Code Article 29: Regulation of Noise, Guidelines for Noise Control Ordinance Monitoring and Enforcement*, December 2014, *https://www.sfdph.org/dph/files/EHSdocs/ehsNoise/GuidelinesNoiseEnforcement.pdf*, accessed December 30, 2018.

Significance Criteria

The Hub Plan and the individual development projects would have a significant effect if they would result in either of the conditions listed below.

- Generation of a substantial temporary or 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 or applicable standards of other agencies.
- Generation of excessive ground-borne vibration or ground-borne noise levels.

A project would also normally result in a significant impact with respect to noise if it would be located within an airport land use plan area or, where such a plan has not been adopted, in an area within 2 miles of a public airport, public use airport, or private air strip and expose people in the area to excessive noise levels or if the project would expose people residing or working in the vicinity of a private airstrip to excessive noise levels. As discussed in the Noise subsection of the initial study (see Appendix B), the closest airports to the Hub Plan area are Oakland International Airport and San Francisco International Airport, which are both approximately 10 miles away. The Hub Plan area is not within an airport land use plan area of either airport and, as indicated above, is more than 2 miles from the airports. There are no private airstrips in the vicinity of the Hub Plan area. Therefore, these questions are not discussed further in this EIR.

Approach to Analysis

The Hub Plan is a program that would result in new planning policies to increase permitted heights and rezoning that would result in more consistent land use controls across the area. With the exception of the streetscape and street network improvements and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, which are analyzed in this EIR at project-specific levels, the Hub Plan would not itself result in immediate physical changes to the existing noise environment. Effects on the existing noise environment could result as individual development projects allowed under the Hub Plan replace existing land uses over time in the Hub Plan area.

Methodology for Analysis of Construction Noise

As discussed above, implementation of the Hub Plan would result in construction noise because the Hub Plan would establish new planning policies and controls that would promote development of sites within the Hub Plan area. The Hub Plan construction noise analysis considers the noise impacts from equipment that is likely to be used for the types of projects that would be developed in the Hub Plan area in the future. In addition, the streetscape and street network improvements proposed in the Hub Plan as well as the demolition and construction activities required for the 30 Van Ness Avenue Project and 98 Franklin Street Project, all of which are analyzed at a project level in this section, would result in construction noise. The project-specific construction noise analysis for the 30 Van Ness Avenue and 98 Franklin Street projects is based on the construction equipment required for the projects, as identified by the project sponsors. Noise from construction activity typically varies, depending on the type of equipment in use, how many pieces of equipment are operating at any one time, the proximity of equipment to a noise receptor location, and the duration of equipment use. In addition, some equipment, such as an excavator with a hoe ram or a jackhammer, may generate "impulsive noise emissions" (i.e., impact noise).

The specific construction duration and equipment required for subsequent development projects are currently unknown.[21] For the Hub Plan's proposed streetscape and street network improvements, construction durations for each block would vary from a high of eight to 10 weeks per block for more intensive changes to a low of four to six weeks for less-intensive improvements. In addition, equipment would be expected to move linearly along the street on which work is proposed rather than operate at the same location each day. Construction activities for the 30 Van Ness Avenue Project are expected to occur over a 3.5-year period, and construction activities for the 98 Franklin Street Project are expected to occur over an approximately 2.25-year (or 27-month) period.

Some construction under the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street may occur during nighttime hours. Specifically, certain activities, such as concrete pours or crane erection, may be easier to conduct during nighttime hours when traffic on surrounding roads is reduced compared with daytime hours. Section 2908 of the noise ordinance prohibits nighttime construction (i.e., between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dB at the nearest property plane, unless a special permit has been granted by the Director of Public Works or the Director of Building Inspection.

Potential construction impacts have been evaluated for the Hub Plan, including subsequent development projects developed pursuant to the Hub Plan's proposed rezoning, and the individual development projects. A programmatic construction noise analysis was conducted for subsequent development projects that would be incentivized under the Hub Plan. A project-level construction noise analysis was conducted for the streetscape and street network improvements and specific individual development projects at 30 Van Ness Avenue and 98 Franklin Street. Each of these project components was evaluated in terms of its potential to result in a substantial temporary increase in ambient noise levels in excess of standards. This was done by calculating the noise levels of the two loudest pieces of equipment and analyzing the potential for construction activities to result in a substantial temporary increase in noise, consistent with FTA guidance for evaluating construction noise. The potential for sleep disturbance at sensitive receptor locations is also considered when determining whether construction activities would

[21] Some projects (30 Otis Street, 10 South Van Ness Avenue, One Oak Street, 42 Otis Street) proposed for upzoning under the Hub Plan are undergoing separate environmental review. For these projects, specific construction durations and equipment are available in each project's respective environmental document.

result in a significant impact. The discussion below describes the methodology for each of these analyses in more detail.

Substantial Temporary Increase in Noise from Construction Activities

The analysis of the potential for subsequent development projects to result in a substantial temporary increase in noise levels during construction is conducted at the programmatic level and informed, in part, by the project-level analysis conducted for the 30 Van Ness Avenue and 98 Franklin Street projects. Other subsequent development projects incentivized by the Hub Plan would be similar in size and likely to require similar construction techniques, equipment, and overall duration, with the exception of the pile driving that may occur for subsequent development projects under the Hub Plan, which is not required or proposed for either individual development project.

Project-level analysis of the potential for the streetscape and street network improvements to result in a substantial temporary increase in noise levels is qualitative and based on the characteristics of linear construction projects of short duration.

For the individual development projects (i.e., 30 Van Ness Avenue and 98 Franklin Street), the construction noise analysis assumes that the two loudest pieces of equipment would operate simultaneously, consistent with FTA guidance for evaluating construction noise (see Regulatory Framework section above). This is a reasonable worst-case scenario for determining the maximum construction noise impact because it is unlikely that more than two of the loudest pieces of equipment would operate at the same time at the same location. Where the analysis finds that construction noise levels would exceed 90 dBA (1-hour L_{eq}) or be 10 dB[22] above ambient noise levels at noise-sensitive receptors, the analysis then evaluates the intensity, frequency, and duration of the noise levels to determine whether construction of the individual development projects would result in a significant impact. In other words, the quantitative standards are not strict thresholds but, rather, information that, along with intensity and duration, is taken into consideration to determine whether a significant impact would occur. A list of the construction equipment that is expected to be used was provided by the project sponsors for each of the individual development projects. Reference noise levels in FHWA's *Road Construction Noise Model User's Guide* were used to assess noise from this equipment.[23]

As described in the Environmental Setting section above, noise-level measurements were conducted at representative locations in the vicinity of the Hub Plan area to establish the current, or baseline, ambient noise levels at existing noise-sensitive land uses in the Hub Plan area. To determine if the Hub Plan (subsequent development projects and streetscape and street network improvements) and the individual development projects would result in a substantial temporary

[22] As discussed in the Environmental Setting, a 10 dB increase in noise corresponds to a doubling of the noise level.

[23] Federal Highway Administration, *Roadway Construction Noise Model User's Guide*, Washington, D.C., January 2006, *http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf*.

increase in noise related to construction, the ambient noise levels at the nearest sensitive receptor were compared to the overall construction noise level from the two loudest pieces of equipment at that receptor. As discussed previously, some construction under the Hub Plan (e.g., concrete pours, crane erection, etc.) may occur during nighttime hours. A noise impact may occur if nighttime construction noise has the potential to result in sleep disturbance for a substantial period of time. Typically, if construction noise would result in interior noise levels of less than 45 dBA at noise-sensitive receptors (with windows closed) or a specific activity would occur for only a short period of time or only a few days over the entire construction period, sleep disturbance would not be expected to be substantial. If sleep disturbance would not be expected to occur, then nighttime construction noise impacts would be considered less than significant.

Methodology for Analysis of Operational Noise

Implementation of the Hub Plan would result in operational noise because the Hub Plan would establish new planning policies and controls that would incentivize development of sites within the Hub Plan area. The development of these sites would generate additional vehicular traffic, which is the primary source of noise throughout the city. The sites would also be likely to require stationary equipment, such as backup generators, and introduce new uses and activities in the Hub Plan area, including sensitive uses such as residences. The Hub Plan operational noise analysis considers the noise impact from these noise sources. In addition, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would likewise result in operational noise from increases in vehicular traffic and the installation of stationary equipment.

Each of these sources, as well as the methodology for how they are analyzed, is described below.

Traffic Noise

To determine whether the Hub Plan and the individual development projects would result in a substantial permanent increase in ambient noise levels, noise from the increased vehicle traffic that could be generated under the Hub Plan and the individual development projects was analyzed, based on traffic data received by the project's traffic engineer. Vehicular traffic noise in the Hub Plan area and vicinity was modeled by using peak-hour traffic along roadway segments. Turning movement data for various intersections was generated and converted into average daily traffic (ADT) volumes for 322 roadway segments in the Hub Plan vicinity (see Appendix E). For vehicular traffic noise impacts, the following thresholds were applied to determine whether the Hub Plan and individual development projects would result in significant vehicle-generated noise impacts: (1) an increase of more than 5 dB is considered a significant vehicular traffic noise increase because, as discussed in the Overview of Noise section above, a 5 dB increase in noise levels is readily noticeable and (2) in places where the existing or resulting noise environment is "conditionally acceptable," "conditionally unacceptable," or "unacceptable," based on the land use compatibility chart (**Table 3.C.9**, p. 3.C-20), any noise increase greater than 3 dB is considered a significant vehicular traffic noise increase. For vehicular traffic noise impacts related to the streetscape and street network improvements, impacts were assessed by determining if the streetscape and street network improvements would generate new vehicles trips or change the network such that some roadways would experience much higher traffic volumes (noting that traffic would have to double to result in a 3 dB increase) and if changes to the roadway alignment would bring traffic much closer to existing noise-sensitive land uses.

As discussed previously, an increase of less than 3 dB is generally not perceptible outside of controlled laboratory conditions. However, in areas where the existing ambient noise levels are already high, a lower significance threshold of 3 dB is appropriate. Given that the existing ambient noise levels throughout the entire Hub Plan area range from 67 to 79 dBA, which is conditionally unacceptable for residential uses, this EIR considers any increase in traffic noise of 3 dB or greater to be a significant impact. An initial screening analysis was conducted for both the plan-level and cumulative traffic-noise impacts assessment to determine which roadway segments would experience a doubling of vehicular traffic compared to existing conditions and, therefore, could experience an increase in noise of approximately 3 dB. At the project level, no roadway segments would experience a doubling of vehicular traffic. For this reason, roadway segments that would experience a smaller increase in vehicular traffic were not analyzed. To assess project-level traffic noise impacts, all roadway segments where project-generated vehicular traffic would increase total roadway volumes by 55 percent or more (i.e., 15 roadway segments out of 322 studied) were quantitatively modeled. As discussed further below, to assess cumulative traffic noise impacts, all roadway segments where a doubling of vehicular traffic from baseline conditions would occur were quantitatively modeled.

Traffic noise modeling for baseline (2020) conditions without Hub Plan implementation and baseline (2020) conditions with Hub Plan implementation was conducted using a spreadsheet that was based on the FHWA Traffic Noise Model, version 2.5. This spreadsheet calculates the vehicular traffic noise level at a fixed distance of 50 feet, which is the typical distance between a roadway centerline and adjacent buildings, and considers the vehicular traffic volume, roadway speed, and vehicle mix that is predicted to occur under each condition. For the assessment of project-level traffic noise impacts, average daily traffic volumes shown in Appendix E were used to determine the vehicular traffic noise levels with and without implementation of the Hub Plan and the individual development projects along the select roadways segments in the Hub Plan area where vehicular traffic would increase by 55 percent or more. For the assessment of cumulative traffic noise impacts, vehicular traffic volumes from the baseline 2020 scenario were compared to the 2040 with-project scenario. As with the assessment of project-level traffic noise impacts, a preliminary screening analysis was conducted to determine which of the 322 analyzed roadway segments would experience a doubling of vehicular traffic (or more) from baseline 2020 no-project to 2040 with-project conditions (35 of the 322 segments studied). Average daily traffic volumes shown in Appendix E were used to determine potential cumulative traffic noise impacts and the potential for the Hub Plan to have a cumulatively considerable contribution to a cumulative impact.

A default vehicle mix (i.e., the proportion of automobiles, trucks, buses, and other vehicles) that is considered reasonable for city roadway segments was used (3.5 percent trucks). Vehicular traffic noise was evaluated in terms of how project-related vehicular traffic noise increases (i.e., over baseline no-project conditions) could affect noise-sensitive land uses in the Hub Plan area.

Stationary Noise Sources

With regard to stationary sources of operational noise, this assessment considers the potential for noise from stationary equipment (e.g., heating, ventilation, and air-conditioning [HVAC] equipment) to exceed the allowed operational noise limit of section 2909(a) (i.e., 5 dB above ambient at a residential property plane), section 2909(b) (i.e., 8 dB above ambient at a commercial property plane), and section 2909(d) of the noise ordinance (i.e., interior noise limits of 45 dBA between the hours of 10 p.m. and 7 a.m. or 55 dBA between the hours of 7 a.m. and 10 p.m. [see p. 3.C-22]). Noise that would be very limited and periodic, such as noise produced by the occasional testing of emergency generators, is evaluated qualitatively; the generators would not be operated with sufficient frequency so as to substantially affect ambient noise levels.

Methodology for Analysis of Vibration Impacts

The discussion below summarizes the methodology applied in this assessment of potential vibration-related impacts from construction of the subsequent development projects under the Hub Plan and the two individual development projects. Operations associated with subsequent development projects under the Hub Plan and the individual development projects are not anticipated to generate perceptible levels of vibration at either onsite or offsite receptors. Most vehicular traffic anticipated during operation of the Hub Plan or the individual development projects would be rubber-tired vehicles that would be operating on pavement that would be in good condition. Furthermore, no major sources of vibration are anticipated within any of the proposed new structures. Garbage collection would occur at off-street locations or along existing streets, comparable to existing garbage collection activities; therefore, garbage collection would not be a substantial source of vibration. For these reasons, operational vibration is not considered further.

Similar to the construction noise analysis, the construction vibration analysis for the individual development projects, analyzed at a project-specific level, informs the analysis of subsequent projects enabled under the Hub Plan because these projects would very likely require similar construction activities and equipment.

In evaluating vibration impacts, the analysis focuses on the potential for construction vibration to result in sleep disturbance during nighttime activities or structural damage.

Sleep Disturbance

Project-related construction vibration is evaluated using methods identified in FTA guidance.[24] Typical vibration levels associated with heavy-duty construction equipment are shown in **Table 3.C-10** at a reference distance of 25 feet and other distances. For any proposed nighttime construction that would require the use of equipment with the potential to generate vibration, vibration levels at nearby receptors are calculated using the source vibration levels in **Table 3.C-10** and the attenuation equation of $PPV = PPV_{ref} \times (25/Distance)^{1.5}$. These calculated values are then compared to the level of "strong perceptibility," as identified by Caltrans (i.e., 0.1 in/sec).

TABLE 3.C-10. VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 175 Feet
Pile driver (impact)	1.518	0.5367	0.2921	0.1898	0.0820
Pile driver (sonic)	0.734	0.2595	0.1413	0.0918	0.0396
Vibratory Roller	0.210	0.0742	0.040	0.0263	0.0113
Hoe ram	0.089	0.0315	0.0171	0.0111	0.0048
Drill	0.089	0.0315	0.0171	0.0111	0.0048
Large bulldozer	0.089	0.0315	0.0171	0.0111	0.0048
Loaded trucks	0.076	0.0269	0.0146	0.0095	0.0041
Jackhammer	0.035	0.0124	0.0067	0.0044	0.0019
Small bulldozer	0.003	0.0011	0.0006	0.0004	0.0002

Source: Federal Transit Administration, 2018, Transit Noise and Vibration Impact Assessment, FTA Report No. 0123, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed: December 31, 2018.

24 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, FTA Report No. 0123, 2018, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed December 31, 2018.

Structural Damage

To determine if construction activities have the potential to damage nearby buildings, vibration levels at nearby receptors are calculated using these source vibration levels and the attenuation equation of $PPV = PPV_{ref} \times (25/Distance)^{1.5}$.[25] These calculated values are then compared to the structural damage criteria, which vary according to structure type (see **Table 3.C-7**, p. 3.C-18). A structure's susceptibility to vibration-induced damage depends on its age, condition, distance from the vibration source, and the vibration level. Vibration impacts on structures are usually significant if construction vibration could result in structural or cosmetic damage or, in the case of a historic resource, materially alter the resource pursuant to CEQA Guidelines section 15064.5. Depending on a structure's condition, potential vibration-induced damage may be cosmetic (e.g., plaster or wood ornamentation may be damaged) or structural, in which case the integrity of the building may be threatened.

IMPACT EVALUATION

CONSTRUCTION NOISE

Impact NOI-1. During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards. (Significant and Unavoidable with Mitigation)

The Hub Plan

The proposed Hub Plan involves no changes that would immediately result in construction noise. However, subsequent development projects developed under the Hub Plan would be expected to involve the use of construction equipment and generate construction noise in the Hub Plan area. Streetscape and street network improvements would also generate construction noise. These are addressed separately from subsequent development projects below.

Construction activity noise levels at or near construction sites in the Hub Plan area would fluctuate, depending on the particular type of construction equipment, the number of pieces, and duration of use. In addition, certain types of construction equipment generate percussive noises, such as pile driving, which can be particularly noisy. This analysis assumes that at least some development in the Hub Plan area will require the use of pile driving. **Table 3.C-11** shows typical noise levels generated by construction equipment.

As described in the Regulatory Framework section, above, section 2907(a) of the Police Code limits noise from construction equipment to 80 dBA when measured at a distance of 100 feet from such equipment or an equivalent sound level at some other convenient distance (with a few exceptions, detailed previously).

[25] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, FTA Report No. 0123, 2018, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed December 31, 2018.

TABLE 3.C-11. TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Construction Equipment	Noise Level at 50 Feet (dB, L_{max})	Noise Level at 100 Feet (dB, L_{max})
Impact pile driver[a]	101 (intermittent)	95 (intermittent)
Hoe ram (impact hammer)[a]	90	84
Concrete saw	90	84
Jackhammer[a]	89	83
Grader	85	79
Auger drill rig	84	78
Tractor	84	78
Bulldozer	82	76
Concrete pump truck	81	75
Excavator	81	75
Crane	81	75
Roller	80	74
Front-end loader	79	73
Air compressor	78	72
Backhoe	78	72
Paver	77	71
Dump Truck	76	70

Source: Federal Highway Administration, *Roadway Construction Noise Model User's Guide*, 2006.
[a.] Impact tool.

As shown in **Table 3.C-11**, the only piece of non-impact equipment that is expected to generate noise levels greater than 80 dBA at a distance of 100 feet that is subject to the noise limit in the noise ordinance is the concrete saw, which would generate a noise level of 84 dBA L_{max} at a distance of 100 feet. Although this is greater than the criteria specified in the noise ordinance, this type of equipment is typically used only for a limited time during construction projects. Specifically, concrete saws are used for relatively detailed demolition work, such as opening up a specific area of roadway or sidewalk. As such, the duration and frequency of their use are typically not extensive. Given that all equipment, except the concrete saw, would comply with applicable noise limits, and given the generally limited duration of concrete saw use, individual pieces of equipment would generally be expected to comply with noise ordinance limits.

With regard to nighttime construction noise, section 2908 of the City noise ordinance prohibits nighttime construction (i.e., between 8 p.m. and 7 a.m.) that would exceed the ambient noise level by 5 dB at the nearest property plane, unless a special permit has been granted by the Director of Public Works or the Director of Building Inspection. If granted, the nighttime construction permit would include stipulations and restrictions that the contractors of subsequent development projects would be required to comply with.

Substantial Temporary or Periodic Increase in Ambient Noise Levels

Construction of subsequent development projects under the Hub Plan could result in substantial temporary or periodic increases in ambient noise levels. For example, at 25 feet, noise from simultaneous operation of a concrete saw and a dozer could be in the range of approximately 90 dBA L_{eq}, as shown in **Table 3.C-12**.

TABLE 3.C-12. EXAMPLE OF CONSTRUCTION NOISE FROM TYPICAL CONSTRUCTION EQUIPMENT

	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Concrete Saw – Sound level (dBA) at 50 feet =	90	20%	83.0
Dozer – Sound level (dBA) at 50 feet =	82	40%	78.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			91 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			84 dBA L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[c]
25	6	97	90
50	0	91	84
100	-6	85	78
200	-12	79	72
300	-16	75	69
400	-18	73	66
500	-20	71	64
600	-22	69	63

[a] The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

[b] Geometric attenuation based on 6 dB per doubling of distance, using 50 feet as the baseline distance (e.g., at 25 feet, combined noise would be 6 dB louder than it would be at 50 feet).

[c] This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers, which may reduce sound levels further.

Some subsequent development projects may involve the use of impact equipment, such as a pile driver, which is the loudest piece of construction equipment typically used for development projects. At 25 feet, noise from simultaneous operation of a concrete saw and a pile driver could be in the range of approximately 100 dBA L_{eq}, as shown in **Table 3.C-13**.

TABLE 3.C-13. EXAMPLE OF CONSTRUCTION NOISE, INCLUDING IMPACT EQUIPMENT

	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Concrete Saw – Sound level (dBA) at 50 feet =	90	20%	83.0
Pile Driver – Sound level (dBA) at 50 feet =	101	20%	94.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			101 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			94 dBA L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[c]
25	6	107	100
50	0	101	94
100	-6	95	88
200	-12	89	82
300	-16	86	79
400	-18	83	76
500	-20	81	74
600	-22	80	73

a. The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

b. Geometric attenuation based on 6 dB per doubling of distance, using 50 feet as the baseline distance (e.g., at 25 feet, combined noise would be 6 dB louder than it would be at 50 feet).

c. This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers, which may reduce sound levels further.

Because some construction activities associated with the subsequent development projects under the Hub Plan may be 25 feet, or less, from existing noise-sensitive land uses, it is likely that construction noise from subsequent development under the Hub Plan could exceed 100 dBA (and therefore exceed the FTA criterion of 90 dBA for residential land uses) at sensitive receptors.

In addition to comparing the construction noise levels to the 90 dBA L_{eq} criterion, as discussed above, the increase from construction noise can be compared to the ambient noise level in the vicinity of the proposed construction. As indicated by the 24-hour measurements conducted in the Hub Plan area (see **Table 3.C-4**, p. 3.C-13), measured 12-hour average L_{eq} noise levels for the normal 7 a.m. to 7 p.m. construction hours of the City were in the range of 65 to 75 dBA L_{eq}. Construction equipment noise associated with subsequent development projects, which could be in the range of 90 to 100 dBA L_{eq}, based on the examples shown in **Table 3.C-12**, p. 3.C-32, and **Table 3.C-13**, p. 3.C-33, could therefore result in a 10 dB or greater increase in noise compared with ambient levels. Depending on the intensity of construction noise levels and the duration, noise from temporary or periodic construction activities associated with subsequent projects that exceeds either 90 dBA or is 10 dB above ambient noise levels, which are not known at this time, could be considered significant. In addition to individual construction projects that could result in significant noise impacts, it is possible that multiple projects enabled under the Hub Plan could be under construction simultaneously in proximity to the same sensitive receptors. If this were to occur, the combined effect of these construction noise impacts may also result in excessive noise levels at sensitive receptor locations (either by prolonging the period of time the receptors would be exposed to construction noise or by resulting in a greater intensity of noise at a given receptor because of activities associated with multiple simultaneous construction projects). In addition, in the event that pile driving is required for a subsequent development project under the Hub Plan, the intensity of construction noise could be even greater.

With regard to nighttime construction noise, a substantial temporary increase in noise that results in sleep disturbance for a substantial period of time would be considered significant. Typically, if construction noise would result in interior noise levels of less than 45 dBA at noise-sensitive receptors (with windows closed) or a specific activity would occur for only a short period of time or only a few days over the entire construction period, sleep disturbance would not be expected to be significant. Construction activities associated with subsequent development projects under the Hub Plan that may occur during nighttime hours include concrete pours, tower crane erection, site maintenance and material delivery/handling, and street utility work. Equipment used for concrete pours would typically include concrete mixer trucks, concrete pumps, and water trucks. Equipment used for tower crane erection would typically include a tractor, a crane, and a forklift. Equipment used for site maintenance and material delivery and handling would typically include trucks, forklifts, and loaders. Equipment used for the street utility work sub-phase of construction would typically include concrete saws, excavators, and forklifts.

Concrete pours, which would occur relatively infrequently during nighttime hours over the duration of a project construction window, could generate combined noise levels of 84 dBA L_{eq} at a distance of 25 feet. Refer to **Table 3.C-14** for the combined noise levels of a concrete mixer truck and a concrete pump truck at various distances. Noise from other construction activities that could occur during nighttime hours would often be similar but may be slightly louder or quieter, depending on the exact equipment being used. For example, combined noise levels from the use of a crane and a tractor, during tower crane erection, would also be approximately 84 dBA L_{eq} at 25 feet. Noise from a concrete saw and an excavator (used for street utility work) at a distance of 25 feet would be approximately 90 dBA L_{eq}, and noise from a loader and forklift at a distance of 25 feet (during nighttime site maintenance activities) would be approximately 81 dBA L_{eq}.

TABLE 3.C-14. EXAMPLE NIGHTTIME CONSTRUCTION NOISE FOR THE HUB PLAN – CONCRETE POURS

Source Data:	Maximum Sound Level (dBA)	Utilization Factor[a]	Leq Sound Level (dBA)
Construction Condition: Nighttime Concrete Pour Example			
Concrete mixer truck – Sound level (dBA) at 50 feet =	79	40%	75.0
Concrete pump truck – Sound level (dBA) at 50 feet =	81	20%	74.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			83 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			78 dBA L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[c]
25	6	89	84
50	0	83	78
100	-6	77	72
200	-12	71	66
300	-16	68	62
400	-18	65	59
500	-20	63	58
600	-22	62	56

[a.] The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

[b.] Geometric attenuation based on 6 dB per doubling of distance, using 50 feet as the baseline distance (e.g., at 25 feet, combined noise would be 6 dB louder than it would be at 50 feet).

[c.] This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers, which may reduce sound levels further.

Based on the typical residential buildings that exist within the city, an assumption of a 25 dB noise reduction with windows closed is reasonable. Therefore, a nighttime noise level of 84 dBA at 25 feet would be reduced to approximately 59 dBA with windows closed, and a nighttime noise level of 90 dBA at 25 feet would be reduced to 65 dBA with windows closed. This interior noise level would be in excess of 45 dBA. Although nighttime construction would occur relatively infrequently compared with daytime construction activities, it is possible that nighttime construction activity could result in sleep disturbance in the vicinity of construction for subsequent development projects under the Hub Plan. Furthermore, if multiple projects enabled under the Hub Plan are under construction in proximity to the same sensitive receptors and both require nighttime construction, the duration for potential sleep disturbance would increase. For these reasons, it is likely that construction of subsequent development projects under the Hub

Plan would result in a substantial temporary or periodic increase in ambient noise levels in excess of thresholds during both daytime and nighttime hours. This impact would be considered ***significant*** for subsequent development projects under the Hub Plan, acknowledging that not all subsequent development projects would necessarily result in a significant construction noise impact.

Mitigation Measures

M-NOI-1a: ***Construction Noise Control Plan for Projects within 250 Feet of a Noise-Sensitive Land Use.*** The project sponsor for each subsequent development project under the Hub Plan located within 250 feet of a noise-sensitive land use or proposing or required to conduct nighttime construction shall develop a noise control plan to ensure that project noise from all construction activities (including construction, demolition, and excavation, etc.) is minimized to the maximum extent feasible, with a goal of construction noise not exceeding 90 dBA and 10 dB above the ambient noise level at noise-sensitive receptors. The measures specified by the project sponsor for each individual project shall be reviewed and approved by the San Francisco Planning Department prior to the issuance of building permits. Measures that may be used to restrict noise include, but are not limited to, those listed below.

- Locate construction equipment, including stationary noise sources (e.g., temporary generators), as far as feasible from adjacent or nearby noise-sensitive receptors.
- Stationary noise sources (e.g., generators and compressors) located in proximity to noise-sensitive land uses shall be muffled, enclosed within temporary enclosures, and shielded by barriers (which can reduce construction noise by as much as 5 dB).
- Electric motors rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used (which can reduce noise levels from exhaust by approximately 10 dB). External jackets on the tools themselves shall also be used (which could reduce noise by approximately 5 dB).
- Construction contractors shall be required to use "quiet" gasoline-powered compressors or electrically powered compressors as well as electric rather than gasoline- or diesel-powered forklifts for small lifting, where feasible.
- Prohibit idling of inactive construction equipment for prolonged periods (i.e., more than two minutes).

- Prohibit or limit gasoline or diesel engines from having unmuffled exhaust systems.
- Ensure that equipment and trucks used for project construction use the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds).
- Ensure that impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction are hydraulically or electrically powered, when possible. Quieter equipment shall be used instead of impact equipment, when feasible (such as drills rather than impact equipment).
- Undertake the noisiest activities during times of least disturbance to surrounding residents and occupants.
- Limit nighttime construction to the extent feasible. If nighttime construction is determined to be necessary, a special permit shall be obtained from the Director of Public Works or the Director of Building Inspection. Nighttime construction activities shall comply with the requirements of the permit. In addition, the contractor shall employ the measures discussed above (e.g., limiting idling, locating equipment far from noise-sensitive receptors, using noise-reducing enclosures, etc.) or other feasible measures to reduce noise such that interior noise at nearby receptors is reduced to the extent practicable (below 45 A-weighted decibels, equivalent sound level, where feasible).
- If required by the San Francisco Planning Department, based on the degree of construction, proximity of sensitive uses, or a noise complaint, the project sponsor shall monitor noise levels during periods of noisy construction activities (demolition, excavation, etc.). A plan for noise monitoring and reporting shall be provided to the San Francisco Planning Department for review prior to the commencement of construction.

Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the San Francisco Planning Department a list of measures for responding to and tracking complaints pertaining to construction noise. These measures shall include onsite posting and a noise hotline. They may also include:

- A procedure and phone number for notifying the San Francisco Planning Department, the health department, or the police department of complaints (during regular construction hours and off hours).

- A sign posted onsite describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction.
- Designation of an onsite construction complaint and enforcement manager for the project.

M-NOI-1b: ***Site-Specific Noise Control Measures for Projects Involving Pile Driving.*** For subsequent development projects under the Hub Plan that require pile driving, a set of site-specific noise attenuation measures shall be prepared under the supervision of a qualified acoustical consultant and reviewed and approved by the San Francisco Planning Department prior to the commencement of any pile-driving activity. These attenuation measures shall be included in the construction of the project and include as many of the following control strategies, and any other effective strategies, as feasible to reduce noise from pile driving at nearby noise-sensitive land uses:

- Require the construction contractor to erect temporary plywood or similar solid noise barriers along the boundaries of the project site to shield sensitive receptors and reduce noise levels;
- Require the construction contractor to implement "quiet" pile-driving technology (such as pre-drilling of piles, sonic pile drivers, and the use of more than one pile driver to shorten the total pile driving duration), where feasible, with consideration of geotechnical and structural requirements and soil conditions.
- Require the construction contractor to monitor the effectiveness of noise attenuation measures by taking noise measurements, at a distance of 100 feet, at least once per day during pile-driving; and
- Require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses.

Significance after Mitigation

Mitigation Measure M-NOI-1a would reduce construction noise from subsequent development projects in the Hub Plan area associated with implementation of the Hub Plan. However, because specific details of subsequent development projects (e.g., equipment types, duration of construction, proximity to sensitive receptors) are not known at this time, it is not possible to ensure that Mitigation Measure M-NOI-1a would reduce all future project-specific impacts to less-than-significant levels. For example, if construction must occur very close to an adjacent noise-sensitive land use, noise levels may be excessive for the entire construction duration. In addition, depending on the type of equipment being used or the proximity of the equipment to nearby noise-sensitive uses, the use of shielding may not be feasible. Therefore, it is possible that construction noise levels would still be excessive for prolonged periods of time, even with implementation of this mitigation measure.

For subsequent development projects under the Hub Plan that would involve the use of pile driving, the project sponsor for a subsequent development project would be required to implement Mitigation Measure M-NOI-1b. Implementation of this measure would help reduce noise from pile driving activity. However, as with Mitigation Measure M-NOI-1a, it cannot be known at this time if implementation of Mitigation Measures NOI-1b would reduce construction noise from pile driving, combined with other equipment noise, to less-than-significant levels for every subsequent development project. For example, if it is not feasible to use alternative methods to install piles (e.g., drilling instead of pile driving in some cases) because of soil types or the specifics of the construction design, noise levels may be excessive. Furthermore, the potential exists for multiple projects enabled under the Hub Plan to be under construction simultaneously and in proximity to one another, thereby increasing the overall intensity or duration of construction noise for nearby sensitive receptors. Therefore, although Mitigation Measures NOI-1a and NOI-1b would reduce the amount of construction noise generated by subsequent development projects in the Hub Plan area to the extent feasible, construction noise from these projects may still be significant. This impact is considered ***significant and unavoidable*** for subsequent development projects under the Hub Plan**.**

Streetscape and Street Network Improvements

The Hub Plan would enhance some streets within the Hub Plan area in order to improve the area for people walking and bicycling. At present, the streets in the Hub Plan area are mostly wide and predominantly one-way streets, with long blocks, narrow sidewalks, and few amenities. The Hub Plan proposes to make improvements to the major streets and alleys in the Hub Plan area, as shown in **Figure 2-2**, p. 2-4, and as described in detail in Chapter 2, Project Description. Specific improvements may include the widening of sidewalks, the creation of new linear public green spaces with street trees, the upgrading of city streetlights, and the realignment or expansion of medians to improve walkability.

Although noise-generating construction equipment would be used to complete these streetscape and street network improvements, the activities would be short term (generally between four and 10 weeks per block for each individual improvement, depending on the intensity of the specific improvement project). In addition, because the streetscape and street network improvement work would be linear, the equipment would not be located near the same noise-sensitive land use for the duration of the relatively short-term construction period for each block of improvement. Furthermore, construction activity is a common occurrence in the urban environment. Although construction noise may be disruptive to persons located nearby, it would be temporary and intermittent and would vary in intensity, depending on the phases of construction.

The equipment expected to be used for these improvements includes a Bobcat/backhoe with impact hammer, an excavator, a concrete saw, a trailer-mounted air compressor, a backhoe with an auger to dig support poles, a compactor, cement and asphalt trucks, a roller, sweepers, and concrete saws.[26] **Table 3.C-11**, p. 3.C-31, shows the noise levels of typically used individual pieces of equipment at a distance of 100 feet compared to the allowable noise level defined in the City noise ordinance. Other types of equipment, such as hand tools and dump trucks, may also be used but are not included in **Table 3.C-11,** p. 3.C-31, because they generate less noise than the other equipment listed in that table.

Again, as shown in **Table 3.C-11**, p. 3.C-31, the only piece of equipment expected to generate noise levels greater than 80 dBA at a distance of 100 feet that is subject to the noise ordinance is a concrete saw, which would generate a noise level of 84 dBA L_{max} at a distance of 100 feet. Given the generally limited duration of use for a concrete saw, individual pieces of equipment would generally be expected to comply with the noise ordinance limits. In addition, construction for streetscape and street network improvements is expected to occur during daytime hours and therefore would not result in nighttime noise increases that could then result in sleep disturbance.

Substantial Temporary or Periodic Increase in Ambient Noise Levels

To assess the noise levels of streetscape and street network improvement construction, a reasonable worst-case noise scenario was modeled that combined noise levels from the two loudest pieces of equipment expected to be used during a single streetscape and street network improvement activity. Construction noise modeling assumed that the types of equipment required for a single activity would be operating simultaneously and at the same location; the results are presented in **Table 3.C-15**. Simultaneous operation of a concrete saw and a Bobcat with an impact hammer during the demolition phase would result in the noise levels shown in **Table 3.C-15**.

As shown in **Table 3.C-15**, below, the estimated noise level at 25 feet from a concrete saw and a mounted impact hammer would be approximately 92 dBA L_{eq}. Although this noise level is in excess of 90 dBA, and may be 10 dB above the ambient level, the construction duration for individual streetscape and street network improvements is expected to be relatively short term, with each block of improvement work taking between four and 10 weeks. The construction equipment for these improvements would be moving linearly along the street during construction, not active at all times during the workday, and not located adjacent to the same noise-sensitive receptor for the entire duration of the improvement. In addition, nighttime construction activities are not anticipated for these streetscape and street network improvements. For these reasons, any noise increases from construction activities for streetscape and street network improvements would not be considered substantial, and this impact would be ***less than significant.***

[26] San Francisco Planning Department, *Construction Equipment Lists*, 2018.

TABLE 3.C-15. CONSTRUCTION NOISE LEVELS FOR HUB STREETSCAPE IMPROVEMENTS

	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Concrete Saw – Sound level (dBA) at 50 feet =	90	20%	83.0
Mounted Impact Hammer – Sound level (dBA) at 50 feet =	90	20%	83.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			93 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			86 dBA L_{eq}
Distance Between Source and Receiver (feet)	**Geometric Attenuation (dB)[b]**	**Calculated L_{max} Sound Level (dBA)[c]**	**Calculated L_{eq} Sound Level (dBA)[c]**
25	6	99	92
50	0	93	86
60	-2	91	84
100	-6	87	80
200	-12	81	74
300	-16	77	70
400	-18	75	68
500	-20	73	66
600	-22	71	64

Notes:

[a] The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

[b] Geometric attenuation based on 6 dB per doubling of distance.

[c] This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Impact NOI-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Less than Significant with Mitigation)

30 Van Ness Avenue Project

Construction of the 30 Van Ness Avenue Project is expected to occur over a 3.5-year period, from May 2020 through December 2023. Construction would typically be limited to the daytime hours of 7 a.m. to 7 p.m., consistent with the City noise ordinance, with some infrequent nighttime construction activities related to concrete pours, crane erection, site maintenance, and material delivery and handling. No impact equipment is proposed for use on the 30 Van Ness Avenue Project. In general, construction for the 30 Van Ness Avenue Project would consist of demolition, site preparation, grading, building construction, paving, and architectural coating phases. However, construction activity is a common occurrence in the urban environment. Although construction noise may be disruptive to persons located nearby, it would be temporary and intermittent and would vary, depending on the phases of construction.

As shown in **Table 3.C-16**, almost all non-impact equipment that is anticipated to be used for project construction would generate noise below the allowable 80 dBA at a distance of 100 feet.

The only piece of non-impact equipment proposed for use that would exceed this noise level is the concrete saw. However, again, the duration and frequency of concrete saw use is typically not extensive.

Substantial Temporary or Periodic Increase in Ambient Noise Levels

This EIR evaluates the construction noise level from the 30 Van Ness Avenue Project and compares it with the FTA criteria discussed above. To analyze the noise levels from construction, a reasonable worst-case noise scenario was modeled that evaluated the noise levels from simultaneous operation of the two loudest pieces of equipment expected to be used during a single phase of the 30 Van Ness Avenue Project. Construction noise modeling evaluated the noise level from the two loudest pieces of equipment that could occur in a given construction phase (because construction phases are not anticipated to overlap) and assumed that the equipment was operating simultaneously and at the same location; the results are presented in **Table 3.C-17**, p. 3.C-44.

The nearest receptors to construction activities for the 30 Van Ness Avenue Project are the multi-family residential apartment complex located at 100 Van Ness Avenue and the Montessori school across Fell Street, located approximately 50 feet from construction activities. As shown in **Table 3.C-17**, p. 3.C-44, combined average construction noise levels at a distance of 50 feet would be approximately 84 dBA L_{eq}. Therefore, the combined noise level would be below the recommended 90 dBA L_{eq} FTA criterion for overall construction noise.

The closest long-term noise measurement location to the proposed 30 Van Ness Avenue Project is LT-5, which is located along Fell Street, northeast of the project site. At this location, the daytime 12-hour L_{eq} noise level was measured at 74.6 dBA L_{eq}. Based on this noise level, overall construction noise levels of 84 dBA L_{eq} would result in an increase in noise of approximately 9.4 dB. The noise increase of 9.4 dB over ambient is close to the FTA allowable criterion of up to a 10 dB increase. Because there is typically a margin of error in both construction noise modeling and noise measurement data, the 9.4 increase is close enough to 10 dB above ambient noise levels for further consideration.

TABLE 3.C-16. 30 VAN NESS AVENUE PROJECT – INDIVIDUAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	L_{max} Noise Level at 50 feet	L_{max} Noise Level at 100 feet
Concrete/industrial saws	90	84
Rubber tired dozers	82	76
Sweepers/scrubbers	80	74
Water trucks	76	70
Bore/drill rigs	85	79
Cranes	81	75
Tractors/loaders/backhoes	80	74
Excavators	81	75
Forklifts	84	78
Welders	74	68
Aerial lifts	85	79
Pumps	77	71
Pavers	77	71
Rollers	85	79
Air compressors	78	72

TABLE 3.C-17. CONSTRUCTION NOISE LEVELS FOR 30 VAN NESS AVENUE PROJECT

Source Data:	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Construction Condition: Demolition			
Concrete Saw – Sound level (dBA) at 50 feet =	90	20%	83.0
Dozer – Sound level (dBA) at 50 feet =	82	40%	78.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			91 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			84 dBA L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)[c]	Calculated L_{eq} Sound Level (dBA)[c]
25	6	97	90
50	0	91	84
60	-2	90	83
100	-6	85	78
200	-12	79	72
300	-16	76	69
400	-18	73	66
500	-20	71	64
600	-22	70	63

Notes:

[a.] The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

[b.] Geometric attenuation based on 6 dB per doubling of distance.

[c.] This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers that may reduce sound levels further.

Although the exact two pieces of equipment modeled above (a concrete saw and a dozer) would not operate concurrently for the full 3.5-year construction duration (they would be expected to operate simultaneously for only a few weeks), it is likely that at least two pieces of equipment (and oftentimes many more than two) would often operate concurrently on the project site. It is therefore possible that a 10 dB increase in noise over ambient would occur during the construction window. Given the 3.5-year construction period; the proximity of sensitive receptors to construction activity; and the already-high existing noise levels, which would be exacerbated during construction (almost doubling in loudness), construction noise is conservatively concluded to be a ***significant*** impact.

As discussed previously under the analysis for the Hub Plan, nighttime construction would be considered to result in a substantial temporary increase in noise if it would result in substantial sleep disturbance. Typically, if construction noise would result in interior noise levels of less than 45 dBA at noise-sensitive receptors (with windows closed) or a specific activity would occur for only a short period of time or only a few days over the entire construction period, sleep disturbance would not be expected to be substantial. Construction activities that may occur during nighttime hours for the 30 Van Ness Avenue Project include concrete pours (which may occur over seven nights), crane erection and adjustment activities (which may occur over 30 to 35 nights), site maintenance activities (which may occur, on average, four nights per month), and material delivery and handling (which may occur two to three nights per week over a period of two to four hours per night). Equipment used for concrete pours would typically include concrete mixer trucks, concrete pumps, and water trucks. Equipment used for crane erection and adjustment would typically include a tractor, crane and forklift. Equipment used for site maintenance activities and material delivery and handling would typically include trucks, forklifts, and loaders.

Concrete pours, which would occur relatively infrequently during nighttime hours over the duration of the project construction window, could generate combined noise levels of 78 dBA L_{eq} at a distance of 50 feet. Refer to **Table 3.C-18** for the combined noise levels of a concrete mixer trunk and a concrete pump truck at various distances. Combined noise from other activities that occur during nighttime hours would be similar but may differ slightly, depending on the exact equipment being used. For example, combined noise levels from the use of a crane and a tractor, during crane erection, would also be approximately 78 dBA L_{eq} at 50 feet. Noise from a loader and a forklift, used during site maintenance activities and materials delivery and handling, at a distance of 50 feet would be approximately 75 dBA L_{eq}. Although noise during crane erection and site maintenance activities and materials delivery/handling may be lower, those activities are expected to occur more frequently.

As discussed under the analysis for the Hub Plan, an assumption of a 25 dB noise reduction with windows closed is reasonable for typical residential buildings that exist within the City. Therefore, a nighttime noise level of 78 dBA at 50 feet during concrete pours (the distance to the residential building located at 100 Van Ness Avenue [across Fell Street]) would be reduced to approximately 53 dBA with windows closed. Noise during other nighttime construction activities for the 30 Van Ness Avenue Project would be even lower. Nighttime construction activities may occur even farther from this sensitive use if work is conducted along Van Ness Avenue instead of Fell Street. However, even if equipment is 100 feet from the nearest sensitive land use, exterior noise could be up to approximately 72 dBA L_{eq}, and interior noise levels would be in excess of 45 dBA. Although nighttime construction would occur relatively infrequently compared with daytime construction activities, it is possible that nighttime construction activity for the 30 Van Ness Avenue Project could result in sleep disturbance in the project vicinity. Furthermore, given the frequency of possible sleep disturbance (a total of approximately 200 to 230 nights), the potential for sleep disturbance from construction activities is considered ***significant.***

TABLE 3.C-18. NIGHTTIME CONSTRUCTION NOISE FOR 30 VAN NESS AVENUE PROJECT – CONCRETE POURS

Source Data:	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Construction Condition: Nighttime Concrete Pour			
Concrete mixer truck – Sound level (dBA) at 50 feet =	79	40%	75.0
Concrete pump truck – Sound level (dBA) at 50 feet =	81	20%	74.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			83 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			78 dBA L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[c]
50	0	83	78
100	-6	77	72
200	-12	71	66
300	-16	68	62
400	-18	65	59
500	-20	63	58
600	-22	62	56

a. The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

b. Geometric attenuation based on 6 dB per doubling of distance.

c. This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers, which may reduce sound levels further.

Because daytime and nighttime construction activities may result in substantial noise increases, construction noise impacts for the 30 Van Ness Avenue Project would be ***significant***.

Mitigation Measures

Mitigation M-NOI-1a, described previously for the Hub Plan, would also be required for the 30 Van Ness Avenue Project.

Significance after Mitigation

With implementation of Mitigation Measure M-NOI-1a, noise levels from project construction at 30 Van Ness Avenue, as well as the intensity of potential noise effects, would be reduced to the maximum extent feasible. Although the duration or frequency of the construction activities would not change as a result of this mitigation measure, the noise levels at nearby receivers would be reduced such that the temporary noise increases would be less substantial. Depending on the specifics of the measures outlined in the noise control plan, once finalized, construction equipment would be intentionally located as far as feasible from adjacent noise-sensitive receptors, and shielding to reduce noise may be incorporated, as feasible. In addition, an onsite construction complaint and enforcement manager would be designated for the project to ensure noise complaints would be addressed. Because of the temporary nature of construction noise, as well as the fact that the two noisiest pieces of construction equipment are not likely to be in operation simultaneously for the entire duration of construction activities, and the analysis above demonstrates that even if the two noisiest pieces of construction equipment were to operate for the entire duration of construction, the combined noise level at noise-sensitive receptors would be just below 10 dB above the ambient noise level, implementation of Mitigation Measure M-NOI-1a is reasonably expected to reduce construction noise impacts to ***less than significant*** for the 30 Van Ness Avenue Project.

98 Franklin Street Project

Construction of the 98 Franklin Street Project is expected to occur over an approximately 2.25-year (or 27-month) period, from June 2021 through August 2023. Construction would be limited to the daytime hours of 6 a.m. to 8 p.m., with some infrequent nighttime construction activities related to concrete/mat foundation pours, street utility work, and tower crane erection. The typical hours of construction for the project would generally be consistent with the daytime construction hours allowed by the City noise ordinance (7 a.m. to 7 p.m.). However, for activities occurring outside of typical daytime hours, the project sponsor would seek approval to conduct construction activities and obtain a special permit from public works. Construction activities would be required to comply with the requirements of this permit, which would include a limit on the level of noise that could be generated and the type of equipment (no impact equipment) that could be used. In general, construction for the 98 Franklin Street Project would consist of demolition, shoring, excavation, building construction, paving, and architectural coating phases. Although construction noise may be disruptive to persons located nearby, it would be temporary and intermittent and would vary, depending on the phases of construction. Such noise is a common occurrence in the urban environment.

As described previously, the City noise ordinance limits noise from individual pieces of powered construction equipment to a level of 80 dBA L_{max} at a distance of 100 feet, except for impact equipment. As shown in **Table 3.C-19**, almost all non-impact equipment anticipated to be used for project construction would generate noise levels below the allowable 80 dBA at a distance of 100 feet.

TABLE 3.C-19. 98 FRANKLIN STREET PROJECT – INDIVIDUAL CONSTRUCTION EQUIPMENT NOISE LEVELS AND NOISE ORDINANCE CRITERIA

Equipment	L_{max} Noise Level at 50 feet	L_{max} Noise Level at 100 feet
Concrete/Industrial Saws	90	84
Rubber Tired Dozers	82	76
Sweepers/Scrubbers	80	74
Water Trucks	76	70
Skid Steer Loaders	80	74
Drill Rigs/Tieback Rig	85	79
Compressor	80	74
Generator	82	76
Cranes	81	75
Excavators	81	75
Rough Terrain Forklift	84	78
Welders	74	68
Scissor lifts	85	79
Pumps	77	71
Pavers	77	71
Rollers	85	79

The only piece of non-impact equipment proposed for use for the 98 Franklin Street Project that would exceed this noise level is the concrete saw. Again, the duration and frequency of concrete saw use is typically not extensive. Because the concrete saw would be used only for a limited time, the construction equipment used for the proposed 98 Franklin Street Project would substantially comply with the noise ordinance.

Substantial Temporary or Periodic Increase in Ambient Noise Levels

To assess overall daytime construction noise levels from the 98 Franklin Street Project, noise from the two loudest pieces of equipment expected to be used during a single phase was modeled, with the equipment assumed to be operating simultaneously. Simultaneous operation of a concrete saw and a dozer during the demolition phase would result in the noise levels shown in **Table 3.C-20**.

TABLE 3.C-20. CONSTRUCTION NOISE LEVELS FOR 98 FRANKLIN STREET PROJECT

Source Data:	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Construction Condition: Demolition			
Concrete Saw – Sound level (dBA) at 50 feet =	90	20%	83.0
Dozer – Sound level (dBA) at 50 feet =	82	40%	78.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			91 L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			84 L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)[c]	Calculated L_{eq} Sound Level (dBA)[c]
25	0	97	90
50	0	91	84
60	-2	89	83
100	-6	85	78
200	-12	79	72
300	-16	75	69
400	-18	73	66
500	-20	71	64
600	-22	69	63

Note:

[a] The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

[b] Geometric attenuation based on 6 dB per doubling of distance.

[c] This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers, which may reduce sound levels further.

The nearest sensitive receptors to construction activities for the 98 Franklin Street Project would be the residential receptors inside the buildings directly adjacent to the project site to the south (20 Franklin Street and 1580–1598 Market Street). The San Francisco Conservatory of Music (a school, which is considered noise sensitive), located at 50 Oak Street, is approximately 25 feet away, across Oak Street and north of the project site. However, the adjacent residences are much closer to the proposed construction. As shown in **Table 3.C-20**, the average noise level (1-hour L_{eq}) at a distance of 25 feet would be approximately 90 dBA L_{eq}. Construction noise at the residential building adjacent to the project site would be even louder because this building would be approximately 10 feet from the closest edge of the 98 Franklin Street project site. At a distance of 10 feet from construction activity, noise from 98 Franklin Street Project construction activity could be up to 98 dBA L_{eq}. Therefore, the construction noise level could be greater than the 90 dBA L_{eq} FTA criteria. Construction activities at 98 Franklin Street are expected to occur over a 27-month period.

Although the exact two pieces of equipment modeled above (a concrete saw and a dozer) would not operate concurrently for the full two-year construction duration (they would be expected to operate simultaneously for approximately one week), it is likely that at least two pieces of equipment (and oftentimes many more than two) would often operate concurrently on the project site. Because of the proximity to sensitive receptors, the 90 dBA L_{eq} FTA criteria would be expected to be exceeded, regardless of which pieces of heavy equipment were operating simultaneously. Therefore, these modeled noise levels would be similar to those that could occur on a regular basis on the project site. Consequently, construction noise levels from project construction would be expected to be in excess of the 90 dBA FTA criterion for the entire 27-month duration of construction and would be considered substantial.

The closest long-term noise measurement to the proposed 98 Franklin Street Project is LT-4, located along Hickory Street (north of Fell Street) to the northwest of the project site. At this location, the daytime 12-hour L_{eq} noise level was 68.0 dBA L_{eq}. Therefore, the overall construction noise levels of more than 98 dBA L_{eq} (at the nearest adjacent noise-sensitive building) would have the potential to increase the overall ambient noise levels in the project area by 30 dB, or well over 10 dB, during daytime hours. Thus, it is anticipated that construction noise would increase ambient noise levels by 10 dB (a perceived doubling of loudness) for the entire duration of construction.

With regard to nighttime construction, typically, if construction noise would result in interior noise levels of less than 45 dBA at noise-sensitive receptors (with windows closed) or if a specific activity would occur for only a short period of time or only a few days over the entire construction period, sleep disturbance would not be expected to be substantial. Construction activities that may occur during nighttime hours for the 98 Franklin Street Project include concrete/mat pours (which may occur on two to four individual nights, typically during the weekend), street utility work (which may occur five to 10 nights for a period of six to eight hours), and tower crane erection (which may occur on two occasions during the daytime but may extend into nighttime hours). Equipment used for concrete pours would typically include concrete mixer trucks, concrete pumps, and water trucks. Equipment used for crane erection would typically include a mobile crane and possibly some support equipment. Equipment used for street utility work would include a concrete saw, excavator, and a forklift.

Street utility work, which would occur relatively infrequently during nighttime hours (an estimated five to 10 times total) over the duration of a project construction window, could generate noise levels from the simultaneous use of a concrete saw and an excavator of 84 dBA L_{eq} at a distance of 50 feet, or 90 dBA L_{eq} at a distance of 25 feet. **Table 3.C-21** shows the noise levels expected to result from nighttime street utility work at various distances. Noise from other activities that occur during nighttime hours would typically be similar but may be slightly louder or quieter, depending on the exact equipment being used. For example, combined noise levels from the use of a crane and a tractor (during tower crane erection) would be approximately 84 dBA at 25 feet, as would noise from a concrete mixer truck and a concrete pump truck (during concrete pours).

TABLE 3.C-21. NIGHTTIME CONSTRUCTION NOISE FOR 98 FRANKLIN STREET PROJECT – STREET UTILITY WORK SUB-PHASE

Source Data:	Maximum Sound Level (dBA)	Utilization Factor[a]	L_{eq} Sound Level (dBA)
Construction Condition: Nighttime Concrete Pour			
Concrete saw – Sound level (dBA) at 50 feet =	90	20%	83.0
Excavator – Sound level (dBA) at 50 feet =	81	40%	77.0
Calculated Data:			
Sources Combined – L_{max} sound level (dBA) at 50 feet =			91 dBA L_{max}
Sources Combined – L_{eq} sound level (dBA) at 50 feet =			84 dBA L_{eq}

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)[b]	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[c]
25	6	97	90
50	0	91	84
100	-6	84	78
200	-12	78	72
300	-16	75	68
400	-18	72	66
500	-20	71	64
600	-22	69	62

a. The utilization factor, or acoustical use factor, is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction; it is used to estimate L_{eq} values from L_{max} values.

b. Geometric attenuation based on 6 dB per doubling of distance.

c. This calculation does not include the effects, if any, of local shielding from walls, topography, or other barriers, which may reduce sound levels further.

As discussed under the analysis for the Hub Plan, a 25 dB noise reduction with windows closed can be assumed for typical residential buildings within the city. Therefore, the nighttime noise level of 84 dBA L_{eq} at 50 feet (or 90 dBA L_{eq} at 25 feet, depending how close street utility activities, or other similar activities, would occur to the adjacent residences), would be reduced to approximately 59 dBA L_{eq} at 50 feet (or 65 dBA L_{eq} at 25 feet) with windows closed. Nighttime construction activities may occur even farther than this distance from the nearest residence, depending on where the work is conducted. However, even if equipment is located 100 feet from the nearest sensitive land use, exterior noise would be approximately 78 dBA L_{eq}, and interior noise levels would be 53 dBA L_{eq} (and still in excess of 45 dBA L_{eq}). Refer to the analysis presented under the Hub Plan for nighttime noise levels of concrete pours, which would also result in interior noise levels in excess of 45 dBA L_{eq}. Although nighttime construction would occur relatively infrequently compared with daytime construction activities, it is possible that nighttime construction activity for the 98 Franklin Street Project could result in sleep disturbance in the project vicinity. Although the frequency of possible sleep disturbance would be relatively limited (an expected maximum total of approximately 20 nights), the potential for sleep disturbance is considered a significant impact.

The degree of the increase in noise levels above the ambient noise level that could occur during daytime hours, in combination with construction occurring over a two-year period in proximity to noise-sensitive receptors, would be considered a substantial temporary increase in noise during daytime hours. In addition, nighttime construction activities may also result in substantial noise increases. Therefore, construction noise from the 98 Franklin Street Project would be ***significant***.

Mitigation Measures

Mitigation Measure M-NOI-1a, described previously for the Hub Plan, would also be required for the 98 Franklin Street Project.

Significance after Mitigation

With implementation of Mitigation Measure M-NOI-1a, noise levels from project construction at 98 Franklin Street, as well as the intensity of potential noise effects, would be reduced to the maximum extent feasible. Although the duration or frequency of the construction activities would not change as a result of this mitigation measure, the noise levels at nearby receivers would be reduced such that the temporary noise increases would be less substantial. For example, depending on the specifics of the measures outlined in the noise control plan once finalized, construction equipment would be intentionally located as far as feasible from adjacent noise-sensitive receptors, and shielding to reduce noise may be incorporated, as feasible. In addition, an onsite construction complaint and enforcement manager would be designated for the project, to ensure noise complaints would be addressed. Because of the temporary nature of construction noise as well as implementation of Mitigation Measure M-NOI-1a, impacts related to construction noise would be ***less than significant*** for the 98 Franklin Street Project.

CONSTRUCTION VIBRATION

Impact NOI-3. Construction of the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would generate excessive ground-borne vibration or ground-borne noise levels. (Less than Significant with Mitigation)

Construction activity is a main cause of vibration effects, and the two main concerns associated with construction-generated vibration are annoyance/sleep disturbance and potential structural damage.

The Hub Plan

As discussed previously, no immediate changes are anticipated to occur with Hub Plan implementation that would result in construction vibration. However, construction of subsequent development projects under the Hub Plan could involve the use of vibration-generating construction equipment, which could result in damage to structures or, if operated during nighttime hours, sleep disturbance. These effects of construction vibration are analyzed below. Streetscape and street network improvements would also generate construction vibration. These are addressed separately from subsequent development projects below.

Damage to Structures

The potential for construction-related vibration impacts depends on the proximity of construction activities to sensitive receptors, the number and types of construction equipment, and duration of construction equipment use. At least some subsequent development projects under the Hub Plan would be expected to use pile drivers, and most development projects would at least be expected to use heavy-duty equipment, such as a large bulldozer or vibratory roller. Typical vibration levels associated with heavy-duty construction equipment are shown in **Table 3.C-10**, p. 3.C-29, at a reference distance of 25 feet and other distances, based on the attenuation equation discussed above in Overview of Vibration and Ground-Borne Noise.

It is unknown at this time how close construction activities associated with subsequent development projects under the Hub Plan would occur to historic or older and potentially fragile buildings because detailed construction information is not available. However, some of the 18 sites proposed for upzoning under the Hub Plan (excluding the two individual development projects analyzed in this EIR) are adjacent to buildings that are considered to be CEQA historical resources, and some may be located close to buildings that would qualify as older residential structures (as shown in **Table 3.C-7**, p. 3.C-18). Refer to **Figure 2-7**, p. 2-23, for information about the location of sites proposed for upzoning and **Figure 3.A-1**, p. 3.A-20, for information about the location of potentially historic resources.

As discussed in Section 3.A, Cultural Resources, and illustrated in **Figure 3.A-1**, p. 3.A-20, several historic structures are located throughout, and adjacent to, the Hub Plan area and vicinity. A number of older residential structures, newer residential structures, and modern industrial/commercial buildings are also expected to be in proximity to construction activities. Because of the lack of detailed construction information for each subsequent development project, it is not possible to ensure that all construction activity from subsequent development projects would occur far enough away from nearby buildings to avoid vibration-related damage from construction in the Hub Plan area. In fact, it is likely that some construction activities would occur adjacent to buildings that could be susceptible to potential damage.

In the Hub Plan area, the majority of the buildings that are most sensitive to vibration would be classified under the Caltrans vibration guidelines (**Table 3.C-7**, p. 3.C-18) as "historic and some old buildings." Fragile buildings or extremely fragile historic buildings are unlikely to be present. This is because most older buildings in the city have been subject to mandatory structural upgrade programs, such as the mandatory Soft-Story Retrofit Program. Buildings classified as older residential buildings, newer residential structures and modern industrial/commercial structures may also occur in the Hub Plan area but are considered less sensitive to vibration than "historic and some old buildings" (refer to **Table 3.C-7**, p. 3.C-18).

It is possible that non-pile driving equipment (such as vibratory rollers or bulldozers) would be required and used at distances closer than 25 feet. At a distance of 25 feet, a vibratory roller would generate ground-borne vibration levels of approximately 0.210 PPV in/sec and a large bulldozer would generate ground-borne vibration levels of approximately 0.089 PPV in/sec. Therefore, at 25 feet, neither a vibratory roller or a large bulldozer would exceed the damage criterion for historic and some old buildings of 0.25 PPV. However, equipment may be required to operate closer than 25 feet from adjacent structures.

Vibration from a large bulldozer at a distance of 10 feet could result in vibration of 0.352 PPV in/sec, and vibration from a vibratory roller at a distance of 19 feet could result in a vibration level of 0.317 PPV in/sec. These levels are both in excess of the recommended 0.25 PPV in/sec level for historic and some old buildings and in excess of the 0.3 PPV in/sec criterion for older residential structures. The 0.25 PPV in/sec criterion for historic and some old buildings could be exceeded by non-piling driving equipment at distances of up to 22 feet for a vibratory roller and 12 feet for a large bulldozer, and it is possible that construction would occur within these distances of adjacent structures. Construction activities using equipment besides pile drivers could therefore potentially result in damage-related vibration effects to adjacent susceptible structures. **Table 3.C-22** shows the vibration levels of a bulldozer and vibratory roller at these distances.

TABLE 3.C-22. VIBRATION LEVELS OF TYPICAL BULLDOZER AND VIBRATORY ROLLER

		Thresholds by Building Type (Continuous/Frequent Intermittent Sources)		
Distance (feet)	**Vibration Level (PPV in/sec)**	**Historic and Some Old Buildings**	**Older Residential Structures**	**New Residential Structures**
Vibratory Roller				
19	0.327	**0.25**	**0.3**	0.5
22	0.254	**0.25**	0.3	0.5
Large Bulldozer				
10	0.353	**0.25**	**0.3**	0.5
12	0.268	**0.25**	0.3	0.5

Note: Bolded thresholds are expected to be exceeded at the applicable distances.

With regard to impact equipment, as shown in **Table 3.C-10**, p. 3.C-29, a pile driver could generate a vibration level of 1.518 PPV in/sec at 25 feet. This vibration level is in excess of the Caltrans continuous/frequent intermittent source criteria, which are designed to prevent structural damage for the building types shown in **Table 3.C-7**, p. 3.C-18, including modern industrial/commercial buildings (the building type shown in **Table 3.C-7**, p. 3.C-18, that is the least susceptible to damage from vibration). Pile driving could result in vibration levels in excess of the damage criteria for historic and some old buildings (0.25 PPV in/sec) at distances of up to 82 feet. At a distance of 70 feet, vibration levels from pile driving could be in excess of the criteria for older residential structures. At a distance of 50 feet, vibration levels from pile driving activity could be in excess of the damage criteria for both new residential structures and modern industrial/commercial structures (as well as all other categories of buildings shown in **Table 3.C-7**, p. 3.C-18). **Table 3.C-23** shows the vibration levels of a pile driver at these distances.

TABLE 3.C-23. PILE DRIVER VIBRATION LEVELS AT VARIOUS DISTANCES

		Thresholds by Building Type (Continuous/Frequent Intermittent Sources)		
Distance (feet)	**Vibration Level (PPV in/sec)**	**Historic and Some Old Buildings**	**Older Residential Structures**	**New Residential Structures**
82	0.26	**0.25**	0.3	0.5
70	0.32	**0.25**	**0.3**	0.5
50	0.54	**0.25**	**0.3**	**0.5**

Note: Bolded thresholds are expected to be exceeded at the applicable distances.

Because vibration levels from both pile drivers and other equipment could exceed the damage criteria for buildings present within the Hub Plan area (historic and some old buildings as well as less fragile buildings types), it is possible that damage could result from vibration-generating activities occurring as a result of implementation of the Hub Plan. Potential vibration impacts related to damage to structures would be considered ***significant***.

Mitigation Measures

M-NOI-3a: ***Protect Adjacent Potentially Susceptible Structures from Construction-Generated Vibration.*** The project sponsor for subsequent development projects in the Hub Plan area shall consult with the San Francisco Planning Department's environmental planning and preservation staff (as applicable) to determine whether adjacent or nearby buildings constitute structures that could be adversely affected by construction-generated vibration. For purposes of this measure, nearby potentially susceptible buildings within 100 feet of a construction site for a subsequent development project shall be considered if pile driving would be required at that site; if no pile driving would occur, potentially susceptible buildings within 25 feet of vibration-generating construction activity, such as the use of excavators, drill rigs, bulldozers, and vibratory rollers, shall be considered.

If buildings adjacent to construction activity are identified that could be adversely affected, the project sponsor shall incorporate into construction specifications for the proposed project a requirement that the construction contractor(s) use all feasible means to avoid damage to adjacent and nearby buildings. Such methods to help reduce vibration-related damage effects may include maintaining a safe distance between the construction site and the potentially affected building, to the extent possible, based on site constraints, or using construction techniques that reduce vibration, such as concrete saws instead of jackhammers or hoe-rams to open excavation trenches, non-vibratory rollers, or hand excavation to the extent feasible. For projects that would require piles, "quiet" pile-driving technologies (such as predrilling piles or using sonic pile drivers) shall be used, as feasible; appropriate excavation shoring methods shall be employed to prevent the movement of adjacent structures; and adequate security shall be ensured to minimize risks related to vandalism and fire.

M-NOI-3b: ***Construction Monitoring Program for Structures Potentially Affected by Vibration***. For structures located close enough to experience vibration levels that could result in building damage, as determined through compliance with Mitigation Measure M-NOI-3a, the project sponsor shall undertake a monitoring program to minimize damage to adjacent buildings and ensure that any such damage is documented and repaired. The monitoring program, which shall apply within 100 feet of pile-driving activities and within 25 feet of other vibration-generating activities, shall be followed and include the following components:

- Prior to the start of any ground-disturbing activity, the project sponsor shall engage a historic architect or qualified historic preservation professional to undertake a pre-construction survey of potentially affected historic buildings identified by the San Francisco Planning Department within 100 feet of planned pile-driving activity or within 25 feet of other vibration-generating activity to document and photograph the existing conditions of the building(s). If nearby affected buildings are not potentially historic, a structural engineer or other professional with similar qualifications shall document and photograph the existing conditions of potentially affected buildings within 100 feet of pile-driving activity or within 25 feet of other vibration-generating construction activity.
- Based on the construction and condition of the resource(s), the consultant shall also establish a standard maximum vibration level that shall not be exceeded at any building, based on existing conditions, character-defining features, soil conditions, and anticipated construction practices (common standards are a peak particle velocity of 0.25 inch per second for historic and some old buildings, a peak particle velocity of 0.3 inch per second for older residential structures, and a peak particle velocity of 0.5 inch per second for new residential structures and modern industrial/commercial buildings, as shown in **Table 3.C-7**, p. 3.C-18).
- To ensure that vibration levels do not exceed the established standard, the project sponsor shall monitor vibration levels at each structure and prohibit vibratory construction activities that generate vibration levels in excess of the standard.
- Should vibration levels be observed in excess of the selected standard, construction shall be halted and alternative construction techniques put in practice, to the extent feasible (e.g., pre-drilled piles could be substituted for driven piles, if feasible, based on soil conditions, or smaller, lighter equipment could be used in some cases).
- The historic preservation professional (for effects on historic buildings) and/or structural engineer (for effects on non-historic structures) shall conduct regular periodic inspections (every three months) of each building during ground-disturbing activity on the project site. Should damage to any building occur, the building(s) shall be remediated to their pre-construction condition at the conclusion of ground-disturbing activity on the site.

Significance after Mitigation

Mitigation Measures M-NOI-3a and M-NOI-3b would be required to ensure that the potential for damage to nearby buildings as a result of construction activity from subsequent development projects would be properly identified, avoided, or monitored; repairs would be made as necessary to return any damaged structure to its pre-construction condition. Maintaining distances of 100 feet between pile-driving activity and 25 feet between other heavy construction activities and nearby potential sensitive structures would ensure that the applicable damage criterion would not be exceeded (refer to **Table 3.C-22**, p. 3.C-55, and **Table 3.C-23**, p. 3.C-55, for the distances at which the thresholds may be exceeded). Should it not be possible to maintain those distances, monitoring would ensure that vibration levels would not exceed the applicable damage criterion. Should the applicable criteria be exceeded, periodic inspections would ensure that damage would not occur or would be remediated to the pre-construction condition. Therefore, following implementation of M-NOI-3a and M-NOI-3b, the impact of subsequent development under the Hub Plan resulting in structural damage from construction vibration would be reduced to a ***less-than-significant*** level.

Sleep Disturbance

Ground-borne vibration could be considered significant if it were to result in sleep disturbance at sensitive receptors near subsequent development sites. A significant vibration impact related to annoyance (specifically, sleep disturbance) could occur if nighttime construction activities were to generate vibration levels that would be strongly perceptible at sensitive receptor locations for a substantial period of time.

Although vibration levels could exceed the strongly perceptible level during daytime hours, construction of subsequent development projects enabled under the Hub Plan would often occur during daytime hours, as defined in the City noise ordinance (which prohibits nighttime construction between 8 p.m. and 7 a.m. without a special permit). However, some relatively short-term construction activities for subsequent development projects may need to occur at night. For example, typical construction activities that often occur during nighttime hours include concrete pours, tower crane erection, and street utility work. Pile driving is not likely to be allowed during nighttime hours, nor is it likely that nighttime construction activities would require the use of equipment such as a large bulldozer that would generate vibration levels above 0.1 PPV in/sec (the criterion for vibration that is strongly perceptible). Nighttime construction may at times require the use of ground-disturbing equipment (such as a small bulldozer or excavator); however, it is more common for equipment such as concrete mixers, concrete saws, and cranes (which do not generate much vibration beyond the immediate work area) to be used during nighttime hours. At a distance of 5 feet, vibration levels from a small bulldozer or excavator would be below the strongly perceptible vibration criterion of 0.10 PPV in/sec, with an estimated vibration level of 0.03 PPV in/sec. Nighttime construction would commonly occur at greater distances from nearby residential land uses.

Although subsequent development projects may require the use of pile-driving or other more ground-disturbing and vibration-generating equipment, it is unlikely that these types of equipment would be used during nighttime hours when people normally sleep. Furthermore, even if some vibration-generating equipment were to be necessary during nighttime hours, the duration of use for that equipment would be expected to be minimal. Therefore, sensitive receptors in and near the Hub Plan area would not be exposed to strongly perceptible ground-borne vibration during nighttime hours for a prolonged period of time, and this impact would be ***less than significant*** for subsequent development projects under the Hub Plan.

Streetscape and Street Network Improvements

Damage to Structures

Specific streetscape and street network improvements would be constructed in and adjacent to the Hub Plan area with implementation of the Hub Plan. These improvements are expected to require the use of construction equipment, which may include a backhoe/Bobcat with an impact hammer, excavators, a backhoe with an auger drill, and a roller, among other equipment types. Refer to **Table 3.C-11**, p. 3.C-31, for a list of the equipment that may be used. Refer to **Figures 2-2** and **2-3**, pp. 2-4 and 2-8, for details about streetscape and street network improvement locations.

As discussed previously, several historic structures are located throughout, and adjacent to, the Hub Plan area and vicinity. A number of older residential structures, newer residential structures, and modern industrial/commercial buildings are also expected to be near future construction activities. Because some of the streetscape and street network improvements would occur on sidewalks or in the street, and therefore close to property lines (and potentially structures) in the Hub Plan area, the potential for vibration-related damage must be assessed. The equipment proposed for use along the sidewalks would typically be smaller than equipment required for the street construction components of these improvement projects. For example, a jackhammer and a small bulldozer or excavator may be required for the sidewalk work, and a vibratory roller and a large bulldozer or excavator may be required for the work within the street.

The types of construction activities conducted for the streetscape improvements would be similar to construction activities that routinely occur at other street or sidewalk projects in the city. Although these construction activities may occur relatively close to buildings that may be considered susceptible to vibration-related damage (e.g., historic or older buildings), public works, which commonly implements these projects, has a standard construction measure pertaining to vibration-related damage. Specifically, according to Standard Construction Measure 9 (Cultural Resources), if the preservation staff of the San Francisco Planning Department identifies potential adverse effects on a historical resource from a project, the preservation planner will consult with public works to determine if the project can be conducted as planned or if the project design can be revised to avoid a significant impact. In addition, if a project is directly adjacent to historic buildings or structures that may be susceptible to vibration, as determined in consultation with the preservation staff of the San Francisco Planning Department, public works will determine if vibrations associated with proposed construction activities have the potential to cause damage to buildings or structures. Finally, if any damage to a historic building or structure occurs, public works will modify activities to minimize further vibration, and any damage to the building will be repaired in consultation with the preservation planner. Therefore, with implementation of this Standard Construction Measure, this impact is considered ***less than significant*** for streetscape and street network improvements**.**

Sleep Disturbance

Public works would implement streetscape and street network improvements pursuant to the San Francisco Planning Department's standard construction measures. Pursuant to these measures, streetscape and street network construction activities would comply with San Francisco Police Code section 2907(a) by limiting noise related to construction equipment to 80 dBA at a distance of 100 feet from such equipment. In addition, San Francisco Police Code section 2907(a) limits construction activity to the hours of 7 a.m. to 8 p.m. on weekdays. No streetscape and street network construction activities are expected to occur outside of these hours; therefore, there would be no nighttime construction activities. Because construction activities would not occur during hours when people normally sleep, sensitive receptors near the improvement projects would not be exposed to strongly perceptible vibration during nighttime hours. This impact would be ***less than significant*** for streetscape and street network improvements.

30 Van Ness Avenue Project

Damage to Structures

Construction of the 30 Van Ness Avenue Project would require equipment that could generate ground-borne vibration. The project site is surrounded by development, including some historic structures. The west boundary of the site for the 30 Van Ness Avenue Project is near the article 11–designated former Masonic Temple at 25 Van Ness Avenue (approximately 100 feet to the west) as well as the article 11–designated 50 Fell Street resource, which is now a Montessori school (approximately 60 feet to the north). Approximately 60 feet east of the eastern project boundary is the California Register of Historical Resources–eligible resource at 1438–1444 Market Street. These buildings are all considered to be historic (refer to **Table 3.C-7**, p. 3.C-18) for the purposes of this vibration analysis. Potential vibration impacts on other buildings types (new residential structures and modern industrial/commercial buildings) are also assessed.

Typical vibration levels associated with heavy-duty construction equipment at a reference distance of 25 feet, and other distances, are shown in **Table 3.C-10**, p. 3.C-29. In addition, **Table 3.C-24,** shows vibration levels from equipment proposed for the 30 Van Ness Avenue

TABLE 3.C-24. VIBRATION LEVELS FOR 30 VAN NESS AVENUE PROJECT CONSTRUCTION EQUIPMENT

Equipment	PPV at 3 Feet	PPV at 60 Feet
Drill	2.14	0.02
Large bulldozer	2.14	0.02
Loaded trucks	1.83	0.01
Jackhammer	0.84	0.06
Small bulldozer	0.07	0.00

Source: Federal Transit Administration, 2018, *Transit Noise and Vibration Impact Assessment, FTA Report No. 0123*, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed: December 31, 2018.

Project at a distance of 60 feet (the distance to the nearest potentially historic resource). The most vibration-intensive types of construction equipment proposed for the 30 Van Ness Avenue Project are a drill and large bulldozer (pile drivers are not proposed for use). The two closest potentially historic resources to the 30 Van Ness Avenue project site are approximately 60 feet from the perimeter of the site. At this distance, a drill and a large bulldozer could both generate ground-borne vibration levels of 0.02 PPV in/sec, which would be less than the building damage criterion for historic and some old buildings. Therefore, historic and some old buildings would not be expected to incur damage as a result of project construction. However, it is possible that construction activities could occur as close as 3 feet from the neighboring property directly east of the project site. At a distance of approximately 3 feet from nearby structures, it is likely the vibration effects could be substantial. Refer to **Table 3.C-24** for vibration levels from equipment proposed for the 30 Van Ness Avenue Project at a distance of 3 feet. As shown in the table, a large bulldozer or auger drill could result in a vibration level of 2.141 PPV in/sec at a distance of 3 feet. This is in excess of the 0.5 PPV in/sec damage criterion for new residential or modern industrial/commercial buildings, the 0.3 PPV in/sec criterion for older residential structures, and the 0.25 PPV in/sec criterion for historic and some old buildings. Therefore, the applicable damage criterion for the building located adjacent to the project site could be exceeded by project construction activities; vibration-related damage impacts would be considered ***significant*** for the 30 Van Ness Avenue Project.

Mitigation Measures

Mitigation M-NOI-3a and M-NOI-3b, described previously for the Hub Plan, would also be required for the 30 Van Ness Avenue Project.

Significance after Mitigation

Mitigation Measures M-NOI-3a and M-NOI-3b, described previously under the analysis for the Hub Plan, would be required for construction of the 30 Van Ness Avenue Project. Implementation of these mitigation measures would ensure that any cosmetic or structural damage caused by construction-related vibration would be avoided or identified through a monitoring program and repaired as necessary to its pre-construction condition. Therefore, following the implementation of M-NOI-3a and M-NOI-3b, construction vibration impacts from the 30 Van Ness Avenue Project would be reduced to a ***less-than-significant*** level.

Sleep Disturbance

With regard to annoyance from sleep disturbance impacts, a significant vibration impact related to annoyance (specifically, sleep disturbance) could occur when nighttime construction activities generate vibration levels that are strongly perceptible at sensitive receptor locations for a prolonged period of time. Construction activity for the 30 Van Ness Avenue Project would mostly occur during daytime hours, with few activities (such as concrete pours, crane erection, site maintenance, and material delivery and handling) occurring during nighttime hours. The activities proposed for nighttime hours would be similar to those discussed under the analysis of the Hub Plan (and would typically involve less earthmoving equipment than activities in the daytime). Equipment used during nighttime activities for the 30 Van Ness Avenue Project would include concrete trucks, concrete pumps, tractor trailer trucks, forklifts, loaders, water trucks, and welders. The type of equipment most likely to result in ground-borne vibration during nighttime construction would be a loader, which could generate vibration levels similar to a small backhoe (refer to **Table 3.C-10**, p. 3.C-29). At a distance of 60 feet (the distance to the nearest occupied residential structure), vibration levels from this type of equipment (approximately 0.001 PPV in/sec) would be below any of the perceptibility criteria shown in **Table 3.C-8**, p. 3.C-19. In addition, equipment would most often be operating much farther from the residential land uses than this distance. Because nighttime construction activities for the 30 Van Ness Avenue Project would not be expected to exceed applicable vibration criteria related to annoyance, vibration impacts related to annoyance would be ***less than significant***.

98 Franklin Street Project

Damage to Structures

Construction of the 98 Franklin Street Project would involve the use of construction equipment that could generate ground-borne vibration. The project site is surrounded by development, including some historic structures. The closest potentially historic resources to the site are the residential complexes located south of the site, 20 Franklin Street, and 1580–1598 Market Street. The closest of these is immediately adjacent to the project site. In addition, 50 Oak Street, 55 Oak Street, and 57 Oak Street are also potentially historic resources. These are located across the street diagonally from the project site, at a distance of approximately 75 feet from the project site's northern perimeter.

Typical vibration levels associated with heavy-duty construction equipment at a reference distance of 25 feet and other distances are shown in **Table 3.C-10**, p. 3.C-29. The most vibration-intensive types of construction equipment proposed for the 98 Franklin Street Project are the drill and large bulldozer.

The potentially historic resources at 50 Oak Street, 55 Oak Street, and 57 Oak Street, which would fall under the category of historic and some old buildings, are approximately 75 feet from the project's northern perimeter. A drill and a large bulldozer could both generate ground-borne vibration levels of 0.017 PPV in/sec at a distance of 75 feet. Therefore, vibration levels from equipment proposed for use at the 98 Franklin Street project site would be below the applicable damage criterion (or 0.25 PPV in/sec for historic and some old buildings) at a distance of 75 feet.

20 Franklin Street, and 1580–1598 Market Street are located directly south of the project site. At times, vibration-generating activities may not occur near the project perimeter. Activities that occur farther away from the southern perimeter of the project site would be less likely to result in damage-related vibration effects. For example, at a distance of 15 feet from nearby structures, vibration levels from the use of a large bulldozer or drill would be approximately 0.192 PPV in/sec. This is below the vibration damage criteria for all types of buildings in the project area. Should vibration-generating construction activity occur at least 15 feet away from nearby structures, impacts related to potential damage would be less than significant. However, it is possible that construction activities could occur as close as 1 to 3 feet away from the neighboring property located directly east of the project site.

With regard to potential damage effects on adjacent structures, **Table 3.C-25** shows vibration levels from equipment proposed for the 98 Franklin Street Project at distances of approximately 1 to 3 feet. At a distance of 3 feet from nearby structures, it is likely that vibration effects could be substantial. For example, a large bulldozer or auger drill could result in a vibration level of 2.141 PPV in/sec at a distance of 3 feet. This is in excess of the 0.5 PPV in/sec damage criterion for new residential or modern industrial/commercial buildings, the 0.3 PPV in/sec criterion for older residential structures, and the 0.25 PPV in/sec criterion for historic and some old buildings. The adjacent building is considered to be in the category of historic and some old buildings, so the 0.25 PPV in/sec criterion would apply. Should vibration-generating construction equipment be used even closer (e.g., a drill may be used as close as 1 foot from the adjacent structure), vibration levels would be even greater. Refer to **Table 3.C-25** for the expected vibration levels from construction equipment proposed for use at a distance of 1 foot.

Because the equipment proposed for project construction would generate ground-borne vibration levels of up to 2.141 PPV in/sec at a distance of 3 feet, and even greater levels should equipment be required for use at closer distances (e.g., 1 foot), vibration levels from project construction would be expected to exceed the damage criteria for all building types at the adjacent structures (located south of the project site). Potential vibration-related damage impacts would be considered ***significant*** for the 98 Franklin Street Project.

TABLE 3.C-25. VIBRATION LEVELS FOR 98 FRANKLIN STREET PROJECT CONSTRUCTION EQUIPMENT

Equipment	PPV at 1 Foot	PPV at 3 Feet
Drill	11.13	2.14
Large bulldozer	11.13	2.14
Loaded trucks	9.50	1.83
Jackhammer	4.375	0.84
Small bulldozer	0.375	0.07

Source: Federal Transit Administration, 2018, Transit Noise and Vibration Impact Assessment, FTA Report No. 0123, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf*, accessed: December 31, 2018.

Mitigation Measures

Mitigation M-NOI-3a and M-NOI-3b, described previously for the Hub Plan, would also be required for the 98 Franklin Street Project.

Significance after Mitigation

Mitigation Measures M-NOI-3a and M-NOI-3b, described previously under the analysis for the Hub Plan, would be required for construction of the 98 Franklin Street Project. Implementation of these mitigation measures would ensure that cosmetic or structural damage caused by construction-related vibration would be avoided or identified through a monitoring program and repaired as necessary to return any damaged structure to its pre-construction condition. Therefore, following the application of M-NOI-3a and M-NOI-3b, construction vibration impacts from the 98 Franklin Street Project would be reduced to ***less-than-significant*** levels.

Sleep Disturbance

With regard to annoyance from sleep disturbance impacts, a significant vibration impact related to annoyance (specifically, sleep disturbance) could occur when nighttime construction activities generate vibration levels that are strongly perceptible at sensitive receptor locations for a prolonged period of time. Construction activity for the 98 Franklin Street Project would occur mostly during daytime hours, with few activities (such as concrete pours, crane erection, and street utility work) occurring during nighttime hours. The activities proposed for nighttime hours would be similar to those discussed under the analysis of the Hub Plan (and would typically involve less earthmoving equipment than daytime activities). Equipment used during nighttime activities for the 98 Franklin Street Project would include concrete mixers, concrete pumps, concrete saws, a forklift, a mobile crane, and an excavator. The type of equipment most likely to result in ground-borne vibration during nighttime construction would be the excavator, which could generate vibration levels similar to that of a small backhoe (refer to **Table 3.C-10**, p. 3.C-29).

It is expected that nighttime construction work would typically not occur closer than 5 feet from the adjacent occupied structures south of the project site. At a distance of 5 feet, the vibration level from an excavator (or small bulldozer) would be approximately 0.034 PPV in/sec. This is below the strongly perceptible vibration criterion of 0.10 PPV in/sec for continuous/frequent intermittent sources. Because vibration-generating construction activity for the 98 Franklin Street Project would not be expected to result in strongly perceptible vibration at adjacent residences during nighttime hours, vibration impacts related to annoyance would be ***less than significant*** for the 98 Franklin Street Project.

OPERATION

Impact NOI-4. During operation, the Hub Plan would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards. (Less than Significant with Mitigation)

The Hub Plan

Vehicular Traffic Noise

Implementation of the Hub Plan would have the potential to lead to an increase in vehicular traffic in the vicinity of the Hub Plan area, as detailed in Section 3.B, Transportation and Circulation. Potential vehicular traffic noise increases from baseline (2020) conditions without Hub Plan implementation to baseline (2020) with Hub Plan implementation were evaluated.

As described previously under the *Methodology for Analysis of Operational Noise* subsection, a screening analysis was conducted to determine if any roadway segments would have a doubling of traffic from baseline (2020) to baseline (2020) with Hub Plan conditions. No roadway segments would experience a doubling of traffic. Although no segments were determined to have a doubling of traffic (and therefore, no segment would be expected to have a 3 dB increase), the roadway segments where project-generated vehicular traffic would increase total roadway volumes by 55 percent or more (15 roadway segments out of 322 studied) were quantitatively modeled. The modeled baseline no-project vehicular traffic noise levels were compared to baseline with-project conditions for 2020. Refer to Appendix E for the vehicular traffic percent increases for all 322 segments and for modeling results of the 15 segments with a greater than 55 percent increase in vehicular traffic as a result of Hub Plan implementation.

All of the 15 modeled roadway segments, as listed in **Table 3.C-26**, where vehicular traffic would increase by 55 percent or more with Hub Plan implementation are street segments with relatively small baseline no-project vehicular traffic volumes. For example, the greatest modeled L_{dn} noise level along any of these segments for the baseline (2020 no-plan) conditions was 56.4 dBA L_{dn} (along Brady Street, from Colton to Otis streets).

TABLE 3.C-26. ANALYSIS OF HUB PLAN TRAFFIC NOISE IMPACTS

Roadway	Segment Location	2020 No-Plan Baseline dBA L_{dn}	2020 With Plan dBA L_{dn}	Increase from Baseline No Plan to Baseline plus Plan dB
Julian Avenue	14th Street to 15th Street	47.1	48.6	1.5
Plum Street	Mission Street to South Van Ness Avenue	50.8	53.4	2.6
Lafayette Street	Natoma Street to Howard Street	52.2	53.9	1.7
Lafayette Street	Minna Street to Natoma Street	52.2	53.9	1.7
Minna Street	Lafayette Street to 11th Street	43.8	43.9	0.2
Lafayette Street	Mission Street to Minna Street	49.6	52.3	2.7
Erie Street	East of Mission Street	47.3	49.5	2.3
12th Street	Market Street to Otis Street	44.9	45.7	0.8
Jessie Street	South of McCoppin Street	48.4	51.1	2.8
Brady Street	Colton Street to Otis Street	56.4	58.3	1.8
Hickory Street	Franklin Street to Van Ness Avenue	47.2	49.2	2.0
Linden Street	Gough Street to Franklin Street	44.3	45.7	1.4
Linden Street	Octavia Street to Gough Street	44.3	45.7	1.4
Octavia Street	Waller Street to Market Street	45.6	47.3	1.7
Mission Street	Duboce Street to halfway toward Plum Street	50.5	52.3	1.7

Roadway segments where traffic volumes would increase by 55 percent or more are on relatively smaller (and quieter) streets; the more heavily trafficked segments (with higher existing or baseline volumes) would require a much greater increase in vehicular traffic volumes to result in a 55 percent increase in overall volume. Because of the transit-oriented and urbanized nature of the Hub Plan area, as well as the available capacity on streets, the level of development that could occur is not enough to significantly increase traffic noise.

As shown in **Table 3.C-26**, p. 3.C-66, project-generated vehicular traffic would increase vehicular traffic noise along the 15 modeled segments between 0.2 dB and 2.8 dB. Note that, as described in the methodology section, this EIR considers any increase in traffic noise of 3 dB or greater to be a significant impact. Also as shown in **Table 3.C-26**, p. 3.C-66, all traffic-noise increases resulting from implementation of the Hub Plan would be below 3 dB, which is also the level considered barely perceptible in laboratory environments. For these reasons, the Hub Plan would not result in a substantial permanent increase in ambient noise levels. Operational traffic noise impacts resulting from the Hub Plan would be ***less than significant***.

The Siting of Noise-Generating Uses

Subsequent development under the Hub Plan could result in the siting of noise sources, such as places of entertainment, emergency generators, HVAC and mechanical equipment, new outdoor gathering spaces, and loading areas, among other noise-generating uses.

HVAC equipment can produce sound levels in the range of 70 to 75 dBA at 50 feet, depending on the size of the equipment.[27] Subsequent development projects under the Hub Plan would require HVAC systems and could be located at least this close to existing noise-sensitive receptors. Note that ambient noise levels in the Hub Plan area vary greatly, with short-term measurements recording L_{eq} noise levels of between approximately 63 and 72 dBA. Therefore, depending on the ambient noise level in the vicinity of a subsequent development project and the distance between HVAC equipment and noise-sensitive land uses, noise from HVAC equipment at subsequent development projects under the Hub Plan could result in noise levels in excess of section 2909(a) and (b) of the noise ordinance (i.e., 5 dB above ambient noise levels at residential property planes, 8 dB above ambient at commercial/industrial property planes).[28] In addition, depending on the proximity of HVAC equipment to nearby receptors, it is possible that HVAC equipment could be installed close enough to residential receptors that resultant interior noise levels could exceed the 55 dBA daytime (7 a.m. to 10 p.m.) and 45 dBA nighttime (10 p.m. to 7 a.m.) section 2909(d) noise ordinance limits at nearby buildings. For example, a noise level of 75 dBA L_{eq}, the upper range of noise from HVAC equipment at 50 feet, is 30 dB above the 45 dBA L_{eq} nighttime noise criterion for fixed equipment. Based on typical residential buildings within the city, a 25 dB noise reduction

---

27 Hoover and Keith, *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*, 2000, Houston, TX.

28 HVAC noise of 70 to 75 dBA L_{eq} at a distance of 50 feet would result in a 7 to 12 dB increase over an ambient noise level of 63 dBA.

with windows closed can be assumed. Subtracting 25 dB from the 75 dBA L_{eq} would yield a noise level of 50 dBA L_{eq} at a distance of 50 feet from equipment. This noise level is in excess of the interior noise standard described above for nighttime hours. Although equipment would often be located farther than this distance from offsite receptors, it is possible that it could be close enough to result in noise that would exceed the nighttime interior noise limit of section 2909(d). HVAC equipment installed during subsequent development projects under the Hub Plan could therefore result in noise levels that would be in excess of noise ordinance standards.

Although fixed stationary sources are subject to the noise limits in article 29, there is no permit approval process to ensure that HVAC equipment would meet the standards in article 29 prior to installation of such equipment. Instead, enforcement of article 29 would occur in response to complaints received by the City. That is, if a complaint is received, either the public health department or police department, depending on the noise source, would be dispatched to determine whether a violation of the noise ordinance exists and coordinate with the property owner(s) on the appropriate abatement methods.

With regard to emergency generators, a 1,500-kilowatt (kW) generator could generate a noise level of 74 dBA at a distance of 7 meters, or 23 feet.[29] Generators are typically housed in a generator or plant room and usually not adjacent to residences. In addition, generator testing would occur very infrequently, most likely on the order of approximately one hour per month, and no more than 50 hours per year, in accordance with air district permits (see Section 3.D, Air Quality). Therefore, noise from testing individual backup emergency generators would most likely not result in a substantial temporary increase in ambient noise levels. For these reasons, noise impacts from emergency generator testing would be ***less than significant***.

Other potential sources of noise, such as outdoor use areas with amplified music and loading areas, could also be included in subsequent development projects enabled under the Hub Plan (loading areas in the interior of a building would not be expected to substantially increase ambient noise levels). Although some noise sources are regulated by article 29, article 29 regulation occurs in response to complaints received by the City. Because this process is typically complaint based, it is possible that noise sources regulated by article 29 could be installed and operated out of compliance with article 29 regulations. Also, there are several noise-generating sources that may be included in subsequent development projects under the Hub Plan that are not regulated by article 29, such as noise from loading areas. Therefore, the potential exists for these noise sources to generate a temporary or permanent increase in noise levels in excess of the noise ordinance standards. Therefore, noise impacts from the siting of noise-generating uses would be considered ***significant.***

[29] Cummins Power Generation Specification Sheet, Mobile Power, 1500 kW, 2013.

Mitigation Measures

M-NOI-4: ***Noise Analysis for Projects in Excess of Applicable Noise Standards***. To reduce potential conflicts between existing sensitive receptors and new noise-generating uses developed under the Hub Plan, a noise analysis shall be required for new development that includes noise-generating activities or equipment (e.g., heating, ventilation, and air-conditioning equipment; outdoor gathering areas; places of entertainment) with the potential to generate noise levels substantially in excess of ambient noise levels or any applicable standards. This analysis shall include, at a minimum, a site survey to identify potential noise-sensitive uses within 900 feet of and with a direct line of sight to the subsequent development project site. It shall also include at least one 24-hour noise measurement (with maximum noise level readings that permit an accurate description of the maximum levels reached during nighttime hours). This analysis shall be conducted prior to the first project approval action.

The analysis shall be prepared by persons qualified in acoustical analysis and/or engineering and shall demonstrate with reasonable certainty that the proposed use would not adversely affect nearby noise-sensitive uses, would not substantially increase ambient noise levels, and would not result in a noise level in excess of any applicable standards. All recommendations from the acoustical analysis necessary to ensure that noise sources would meet applicable requirements of the noise ordinance and/or not result in substantial increases in ambient noise levels shall be incorporated into the building design and operations. Should such concerns be present, the San Francisco Planning Department may require the completion of a detailed noise control analysis (by a person qualified in acoustical analysis and/or engineering) that includes the incorporation of noise reduction measures (including quieter equipment, construction of barriers or enclosures, etc.) prior to the first project approval action.

Significance after Mitigation

Implementation of Mitigation Measure M-NOI-4 would ensure that the building design, enclosure design, and/or changes in operations resulting from implementation of Mitigation Measure M-NOI-4 would comply with the applicable criteria in the municipal code. This impact would be considered ***less than significant with mitigation*** for subsequent development projects under the Hub Plan.

Streetscape and Street Network Improvements

Vehicular Traffic Noise

Streetscape and street network improvements would not be expected to result in an increase in vehicular traffic noise in the Hub Plan area. In order for streetscape and street network improvements to result in 3 dB increase in noise from vehicular traffic along any roadway, a doubling of vehicular traffic along that roadway would have to occur. This could be achieved either by doubling the number of vehicles on a given street or by bringing the vehicular traffic lanes twice as close to noise-sensitive land uses (i.e., halving the distance between the lanes and the receptors).

Because the streetscape and street network improvements would not generate any vehicle trips and because they would not move vehicular traffic lanes closer to existing noise-sensitive receptors, the streetscape and street network improvements would not result in increases in operational traffic noise. Therefore, impacts related to vehicular traffic noise increases resulting from streetscape and street network improvements would be ***less than significant.***

Impact NOI-5. Operations of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Less than Significant)

30 Van Ness Avenue Project

Vehicular Traffic Noise

The vehicular traffic noise analysis for the Hub Plan can be used to determine potential project-specific vehicular traffic noise impacts for the 30 Van Ness Avenue Project. This is because the Hub Plan traffic analysis upon which the vehicular traffic noise analysis was based includes vehicle trips that would be generated by the 30 Van Ness Avenue Project. Therefore, because the Hub Plan (which assumes growth from development of the 30 Van Ness Avenue Project) would not result in a significant noise increase from traffic along any of the 322 analyzed roadway segments, the 30 Van Ness Avenue Project also would not result in significant traffic noise increases. Traffic noise impacts from the 30 Van Ness Avenue Project would be ***less than significant.***

HVAC Equipment

The proposed 30 Van Ness Avenue Project would include the use of HVAC, boilers, and associated pumps to provide heating and air to the subsequent development projects. All HVAC equipment would be located in a single equipment room on a middle level of a proposed building, in a floor-specific fan room, or on or near the roof of a proposed building and behind some form of solid shielding.

HVAC equipment noise increases over the ambient noise level must be limited to no more than a 5 or 8 dB increase for residential or commercial properties, respectively, per the City noise ordinance. In addition, stationary operational noise is limited by section 2909(d) of the noise ordinance, which provides that noise at residential interiors cannot exceed 55 dBA during daytime hours (7 a.m. to 10 p.m.) and 45 dBA during nighttime hours (10 p.m. to 7 a.m.).

Noise from HVAC equipment can vary, depending on the size of the equipment. The exact HVAC equipment proposed for use has not yet been selected. However, this analysis assumes that HVAC equipment similar to standard package units would be used for the project. A standard HVAC unit would produce sound levels in the range of 70 to 75 dBA at 50 feet.[30]

Noise from HVAC equipment in the plant room would not be expected to exceed any applicable standards (i.e., interior noise level of 55 dBA during daytime hours, interior noise level of 45 dBA during nighttime hours, an 8 dB increase over ambient noise at the property plane for noise generated by commercial/residential mixed-use land uses) because of the noise reduction provided by the physical building. However, because some HVAC equipment could be located on the roof, this analysis assesses the potential for noise levels to exceed the noise ordinance standards of section 2909(b) and (d). The rooftop HVAC equipment for the 30 Van Ness Avenue Project would be enclosed or screened with solid walls or screens that would block the line of sight between the property plane and the equipment. Effective noise barriers typically reduce noise levels by 5 to 10 dB, so it can be assumed that this solid wall or screen would result in HVAC equipment noise reduction of at least 5 dB.[31]

The project site is 65 feet from the residential uses across Fell Street. Noise from unshielded HVAC equipment at a distance of 65 feet could be in the range of 68 to 73 dBA (based on the noise levels of a standard HVAC unit at 50 feet). However, the proposed project is expected to be 45 stories, and the adjacent residential use (located at 100 Van Ness Avenue) is only 29 stories. Noise levels would be reduced at the nearby residence because the HVAC equipment would be located an additional 200 feet away, approximately, because of the differing building heights, resulting in additional noise reduction. Noise at a distance of 200 feet (or at the exterior of the top floor of the adjacent residential building) would be in the range of 58 to 63 dBA at a distance of 200 feet, based on the source noise level of 70 to 75 dBA at 50 feet. The noise level would be further reduced by 5 dB[32] because of the solid screens or walls that would be located around the rooftop HVAC equipment, resulting in noise levels in the 53 to 58 dBA range at noise-sensitive receptors at 100 Van Ness Avenue.

Because section 2909(d) of the noise ordinance pertains to interior noise, a 15 dB reduction can be applied to interior noise (with windows open) to determine what interior noise would be at the adjacent building. The exterior noise levels of 53 to 58 dBA would be reduced to between 38 and 43 dBA with windows open, based on this 15 dB exterior-to-interior reduction. Therefore, noise levels at the nearby noise-sensitive land uses would not be expected to exceed the daytime or nighttime interior noise standards of 55 dBA and 45 dBA, respectively.

---

[30] Hoover and Keith, *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*, 2000, Houston, TX.

[31] Federal Highway Administration, *Highway Traffic Noise Barriers at a Glance*, https://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.cfm, accessed July 5, 2019.

[32] Ibid.

With regard to section 2909(b) of the noise ordinance (8 dB above ambient noise levels at the property plane for commercial/residential mixed-use land uses) and as described above, a standard HVAC unit can produce sound levels in the range of 70 to 75 dBA at 50 feet.[33] At a distance of 25 feet, noise levels from HVAC equipment would be in the range of 76 to 81 dBA; at a distance of approximately 13 feet, noise levels would be in the range of 82 to 87 dBA. With the incorporation of the solid wall or screen located around, and blocking the line of sight to, the HVAC equipment, noise levels would be reduced by an additional 5 dB. Resulting HVAC noise levels would be in the range of 77 to 82 dBA. In this area, the 24-hour L_{dn} ambient noise level near the project site was estimated to be approximately 77.8 dBA (LT-5 from **Table 3.C-4**, p. 3.C-13). Therefore, even at a distance of 13 feet, the upper limits of the estimated HVAC noise with the incorporation of the solid screen or wall (82 dBA) would exceed the ambient noise level (77.8 dBA) by only approximately 4 dB, which is below the allowable 8 dB increase at the property plane.

Although the precise location of the HVAC equipment for the proposed project is not known at this time, HVAC equipment is expected to be located far enough from the property plane such that noise levels would not exceed the ambient level by more than 8 dB. Therefore, noise from the proposed project's HVAC equipment would be expected to comply with section 2909(b) of the noise ordinance. In addition, as described previously, HVAC noise would also be expected to comply with section 2909(d) of the noise ordinance during daytime and nighttime hours. For these reasons, impacts related to HVAC noise levels potentially exceeding sections 2909(b) and (d) of the noise ordinance are considered ***less than significant***.

Emergency Generators

The proposed 30 Van Ness Avenue Project would have up to two generators on the rooftop, on either the ninth or the 13th floor, to supply electricity to the building and facilities during a power outage. The proposed generators would be tested during daytime hours (7 a.m. to 8 p.m.). These generators may be tested up to 40 or 50 hours per year. For the purposes of this analysis, it is conservatively assumed that each generator would be tested between one and four hours per month.

Two 1,500 kW generators are proposed for use. A 1,500 kW Cummins generator generates a noise level of 74 dBA at a distance of 7 meters, or 23 feet.[34] The nearest offsite residences are approximately 60 feet from the project site; therefore, noise levels at these locations would be somewhat reduced. Additional noise attenuation would be provided in the form of the enclosure or screen proposed for use around the generators. This would be designed to block the line of sight between the generator and nearby noise-sensitive land uses.

---

33 Hoover and Keith, *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*, 2000, Houston, TX.

34 Cummins Power Generation Specification Sheet, Mobile Power, 1500 KW, 2013.

Because the generator would create a noise level of 74 dBA at 23 feet, additional noise reduction would be provided by the barriers or enclosures that would block the lines of sight between the generator and adjacent land uses, and the ambient noise levels would be louder than the generator noise, or approximately 77.8 dBA (LT-5 from **Table 3.C-4**, p. 3.C-13), it is unlikely that noise from the generator would result in a substantial temporary or permanent increase in noise levels. Furthermore, testing of the generators would occur infrequently (between one and four hours per month) and only during daytime hours when people are less sensitive to noise. Therefore, noise impacts from the intermittent and temporary testing of emergency generators would be ***less than significant*** for the 30 Van Ness Avenue Project**.**

Other Noise-Generating Uses

With regard to operational sources of noise other than traffic and mechanical equipment, outdoor use spaces and loading areas may have the potential to generate noise. However, there are no expected outdoor use spaces for the 30 Van Ness Avenue Project where large crowds would gather or where formal events would take place. Though there may be small-scale events, such as social gatherings, in the project's ground-floor open space and in the project's podium open space, these events would be typical of office and residential uses and would not involve amplified music. For these reasons, noise from gatherings or events at outdoor use spaces for the 30 Van Ness Avenue Project would not be expected to result in substantial increases in ambient noise levels, and the impact would be ***less than significant.***

Although loading areas would be developed as a part of the 30 Van Ness Avenue Project, which would include the use of trucks for residential move in/move out as well as office and residential deliveries, the loading and unloading of goods is a common occurrence in the city. Although backup alarms can be a source of annoyance, commercial and passenger loading would occur either within the proposed 106-foot on-street loading zone along the project frontage on Van Ness Avenue (which is relatively far from offsite sensitive land uses and on a relatively busy street) or at an off-street loading zone accessed from Fell Street (located inside the building). Because of the distances between the loading zone along Van Ness Avenue and the relatively elevated ambient noise level along this major thoroughfare, the intermittent loading operations at this location would not be expected to result in excessive noise at nearby noise-sensitive land uses. Loading operations located inside the building would also not result in excessive noise because noise would be shielded by the building. Therefore, impacts from short-term and intermittent loading activity for the 30 Van Ness Avenue Project would be ***less than significant***.

98 Franklin Street Project

Vehicular Traffic Noise

The vehicular traffic noise analysis for the Hub Plan can be used to determine potential project-specific vehicular traffic noise impacts for the 98 Franklin Street Project; this is because the traffic analysis upon which the Hub Plan vehicular traffic noise analysis was based includes vehicle trips that would be generated by the 98 Franklin Street Project. Therefore, because the Hub Plan (which assumes growth from development of the 98 Franklin Street Project) would not result in a significant noise increase from traffic along any of the 322 analyzed roadway segments, the 98 Franklin Street Project also would not result in significant traffic noise increases. Traffic noise impacts from the 98 Franklin Street project would be ***less than significant.***

HVAC Equipment

The 98 Franklin Street Project would include the use of HVAC boilers and associated pumps to provide heating and air to the subsequent development projects. All HVAC equipment would either be enclosed and located in mechanical, electrical, or plumbing rooms within the building, or located on the roof of the proposed building. Solid shielding would be provided around the rooftop HVAC equipment.

As described above, HVAC equipment can produce sound levels in the range of 70 to 75 dBA at 50 feet, depending on the size of the HVAC equipment.[35] Noise from HVAC equipment within the building would be reduced greatly by intervening walls between offsite noise-sensitive land uses. The shielding provided by the building materials would reduce noise substantially, and the likelihood of interior HVAC equipment being audible outside of the building is low. However, rooftop HVAC equipment noise must be assessed. The rooftop HVAC equipment for the 98 Franklin Street Project would be screened with solid walls or screens that would block the line of sight between the property plane and the equipment. Effective noise barriers typically reduce noise levels by 5 to 10 dB, so it can be assumed that this solid wall or screen would result in an at least a 5 dB reduction in HVAC equipment noise.[36] The exterior noise levels of 53 to 58 dBA would be reduced to 38 to 43 dBA with windows open, based on this 15 dB exterior-to-interior reduction. Therefore, noise levels at the adjacent noise-sensitive land uses would not be expected to exceed the daytime or nighttime interior noise standards of 55 dBA and 45 dBA, respectively.

With regard to section 2909(b) of the noise ordinance (8 dB above ambient noise levels at the property plane for commercial/residential mixed-use land uses) and as described above, a standard HVAC unit can produce sound levels in the range of 70 to 75 dBA at 50 feet.[37] At a distance of 25 feet, noise levels from HVAC equipment would be in the range of 76 to 81 dBA; at a distance of approximately 13 feet, noise levels would be in the range of 82 to 87 dBA. The 24-hour ambient noise level near the project site was estimated to be approximately 74.3 dBA L_{dn}. With inclusion of the 5 dB reduction from the solid wall or screen that would shield the equipment, noise levels at 13 feet would be reduced to the range of 77 to 82 dBA. It is likely that HVAC equipment would be located even farther from the property plane than this distance.

---

35 Hoover and Keith, *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*, 2000, Houston, TX.

36 Federal Highway Administration, *Highway Traffic Noise Barriers at a Glance*, https://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.cfm, accessed July 5, 2019.

37 Hoover and Keith, *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*, 2000, Houston, TX.

However, even at a distance of 13 feet, the upper limits of the estimated HVAC noise (82 dBA) would not exceed the ambient noise level (approximately 74.3 dBA) by more than 8 dB.

Although the precise location of the HVAC equipment for the proposed project is not known at this time, HVAC equipment would very likely be located far enough from the property plane such that noise levels would not exceed the ambient level by more than 8 dB. Therefore, noise from the proposed project's HVAC equipment would be expected to comply with section 2909(b) of the noise ordinance. In addition, as described previously, HVAC noise would also be expected to comply with section 2909(d) of the noise ordinance during daytime and nighttime hours. For these reasons, impacts related to HVAC noise levels exceeding section 2909(b) and (d) of the noise ordinance are considered ***less than significant***.

Emergency Generators

The proposed 98 Franklin Street Project would have a single emergency generator that would be located in a generator room on the second floor of the building. The venting for the generator would be piped to the fifth floor. The proposed generator would be tested regularly during daytime hours. For the purposes of this analysis, it is assumed that the generator would be tested between one and four hours per month, or up to 40 to 50 hours per year.

A 2,000 kW generator is proposed for use at the project site. A 2,000 kW Cummins generator generates a noise level of 78 dBA at a distance of 7 meters, or 23 feet.[38] The nearest offsite residences to the proposed generator room would be located in the currently under-construction 1554 Market Street building, approximately 10 feet from the project site. Although this residential building would be adjacent to the proposed project and the proposed emergency generator room, it is expected that the generator would be somewhat set back from the wall in the generator room. Noise reduction would occur from the walls of the proposed project and the adjacent building such that noise from temporary and intermittent testing of the generator would be greatly reduced. Therefore, because the generators would be shielded and the testing would occur infrequently, any temporary increases in noise would not be considered substantial. Impacts from the intermittent and temporary testing of the emergency generator on nearby noise-sensitive land uses would be ***less than significant.***

Other Noise-Generating Uses

With regard to operational sources of noise besides traffic and mechanical equipment, outdoor use spaces and loading areas may have the potential to generate noise. However, there are no expected outdoor use spaces for the 98 Franklin Street Project where large crowds would gather or events would take place. Though there may quarterly events that could involve up to 100 people, these events would be held indoors and would not involve the use of amplified music.

---

[38] Cummins Power Generation Specification Sheet, Mobile Power, 2000 KW, 2017.

Therefore, noise from gatherings or events at the outdoor use space for the 98 Franklin Street Project would be ***less than significant.***

Although loading areas would be developed as a part of the 98 Franklin Street Project, (which would include the use of trucks for residential move in/move out as well as school, retail, and residential deliveries) and backup alarms can be a source of annoyance, the loading and unloading of goods is a common occurrence in the city. Commercial and passenger loading would occur within one off-street truck loading space for freight as well as two off-street service-vehicle spaces provided in basement level 1 of 98 Franklin Street. Although the project proposes white-curb loading zones on both Franklin and Oak streets, trucks would not be expected to use these on-street loading zones frequently because they would have access to the off-street loading zones in the basement of the building. Because truck deliveries and loading activities would be expected to occur in the basement for the proposed 98 Franklin Street Project, and because loading is a common occurrence in the city, impacts related to loading noise at the 98 Franklin Street project site would be ***less than significant***.

Cumulative Impacts

The cumulative context for noise and vibration impacts is the Hub Plan area, including the areas surrounding the individual development projects at 30 Van Ness Avenue and 98 Franklin Street. Specifically, the geographic scope of analysis for cumulative noise and vibration construction impacts, as well as stationary noise sources, encompasses cumulative projects within approximately 1,000 feet of individual project sites and the Hub Plan area. Beyond 1,000 feet, the contributions of noise from other projects would be greatly attenuated through both distance and intervening structures, and their contribution would be expected to be minimal. The analysis considers vehicular traffic noise from cumulative growth as well as cumulative construction noise and vibration from other potential projects in the Hub Plan area.

Impact C-NOI-1. Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Significant and Unavoidable with Mitigation)

Construction noise is a localized impact that reduces as distance from the noise source increases. In addition, intervening features (e.g., buildings) between construction areas and nearby noise-sensitive land uses result in additional noise attenuation by providing barriers that break the line of sight between noise-generating equipment and sensitive receptors. These barriers can block sound wave propagation and somewhat reduce noise at a given receiver.

Subsequent Development under the Hub Plan

Construction activities from subsequent development projects enabled under the Hub Plan could coincide with other construction activity in the Hub Plan area. Nearby projects that may be under construction during construction of subsequent development projects under the Hub Plan include Better Market Street and specific projects such as 1629 Market Street, 1700 Market Street, 1740 Market Street, One Oak Street, 30 Otis Street, 42 Otis Street, and 10 South Van Ness Avenue. For a full list of other projects, refer to **Table 3-2**, p. 3-9, in Chapter 3.

Construction activity is a common occurrence in the urban environment. Although construction noise may be disruptive to persons located nearby, it would be temporary and intermittent and would vary, depending on the phases of construction. In addition, construction activities in the city would be required to comply with the San Francisco Noise Ordinance, which prohibits construction activities between 8 p.m. and 7 a.m. without a special nighttime noise permit and limits noise from any individual piece of construction equipment to 80 dBA at 100 feet, except for impact tools approved by the Department of Building Inspection or public works (limited to 80 dBA at 100 feet).

Because other construction may be occurring concurrently with construction of subsequent projects under the Hub Plan, noise-sensitive receptors near project sites could be exposed to noise from concurrent construction activities. In addition, construction for a certain project could begin very shortly after construction of a different project is completed. If this were to occur, construction noise from these consecutive construction projects would affect the same receptors for a longer period of time and could result in a more substantial noise effects compared with construction noise from a single project in isolation.

Although construction schedules for the projects listed in **Table 3-2**, p. 3-9, could change once construction of the development projects under the Hub Plan is under way, it is likely that at least some subsequent development projects under the Hub Plan would overlap with some of the projects listed in **Table 3-2**, p. 3-9. Because construction of subsequent development projects under the Hub Plan could combine with that of nearby projects (either by occurring concurrently and increasing noise levels or consecutively or increasing the duration of noise exposure), cumulative construction noise impacts would be considered significant.

With regard to the potential for subsequent development projects under the Hub Plan to have a cumulatively considerable contribution to this cumulative construction noise impact, it is possible that individual construction projects could exceed the applicable criteria for overall construction noise, or that multiple projects under the Hub Plan could be under construction simultaneously or consecutively in close to the same sensitive receptors. Thus, without mitigation, construction of subsequent development projects enabled by the Hub Plan would result in a cumulatively considerable contribution to this cumulative impact.

Implementation of Mitigation Measure M-NOI-1a, Construction Noise Control Plan for Projects Within 250 Feet of a Noise-Sensitive Land Use, and M-NOI-1b, Site-Specific Noise Control Measures for Projects Involving Pile Driving, for the Hub Plan would reduce construction noise from subsequent development activities under the Hub Plan. However, because specific details of subsequent development projects under the Hub Plan (e.g., equipment types, duration of construction, proximity to sensitive receptors) are not known at this time, it is not possible to ensure that these mitigation measures would reduce the construction impacts of all subsequent development projects under the Hub Plan to less-than-significant levels. In addition, traffic Mitigation Measure TR-1, Construction Management Plan, would require subsequent projects that overlap other nearby construction projects to consult with applicable City departments to coordinate a construction management plan with the adjacent project(s). This would help reduce the severity of any disruption at adjacent land uses and could help reduce noise effects from construction-related traffic. However, although these mitigation measures could reduce the severity of potential noise effects during construction of multiple projects in the Hub Plan area, it cannot be stated with certainty that they would reduce cumulative impacts to less-than-significant levels. For these reasons, construction of subsequent development projects under the Hub Plan would be expected to result in a cumulatively considerable contribution to this cumulative construction noise impact. This cumulative impact is ***significant and unavoidable with mitigation***. No additional mitigation measures have been identified.

STREETSCAPE AND STREET NETWORK IMPROVEMENTS

With regard to the proposed streetscape and street network improvements, construction activities would be short term (generally between four and 10 weeks for each individual improvement) and linear, with equipment not typically located near the same noise-sensitive land use for the duration of the construction period. Although the cumulative construction noise impact in the Hub Plan area would be considered significant, noise increases from construction activities for streetscape and street network improvements would not be considered substantial because of the comparatively short duration of such activities compared with the construction of development projects. Therefore, streetscape and street network improvements would not result in a cumulatively considerable contribution to this overall cumulative impact, and the impact would be ***less than significant***.

30 VAN NESS AVENUE AND 98 FRANKLIN STREET PROJECTS

Construction activities for the 30 Van Ness Avenue and 98 Franklin Street projects could coincide with similar activities for other projects in the Hub Plan area. Because construction schedules for the projects listed in **Table 3-2**, p. 3-9, could change once construction of the individual development projects are under way, it is difficult to predict whether construction activities associated with nearby projects would overlap with those of the two individual development projects. However, based on the fact that other specific projects would be located in the immediate vicinity of the two individual development project sites, it is likely that construction activities from some projects could either overlap with the two individual development projects' construction activities or occur consecutively. If projects located near one another occur in close succession, the overall duration of construction noise in the area would increase.

Because the construction impacts of the individual development projects could combine with those of nearby projects (either by occurring concurrently and increasing noise levels or occurring consecutively and increasing the duration of noise exposure), cumulative construction noise impacts would be considered significant. Because of the severity of construction noise impacts discussed above in Impact NOI-2, before mitigation, the individual development projects would result in a cumulatively considerable contribution to this cumulative impact.

Although implementation of Mitigation Measure M-NOI-1a for both the 30 Van Ness Avenue Project and 98 Franklin Street Project would reduce the direct construction noise impacts of these two projects, it is possible that these projects could result in a cumulatively considerable contribution to a significant cumulative construction noise impact, even with mitigation. This is largely because, although noise would be reduced with mitigation, a substantial number of projects could be under construction concurrently or consecutively with each of the individual projects, which would increase the intensity and duration of construction activity experienced by nearby receptors. In addition, as described under the Hub Plan, traffic Mitigation Measure TR-1, Construction Management Plan, would require subsequent projects that overlap other nearby construction projects to consult with applicable City departments to coordinate a construction management plan with the adjacent project(s). This would help reduce the severity of any disruption at adjacent land uses and could help to reduce noise effects from construction-related traffic for the two individual development projects. However, it would not reduce cumulative impacts related to construction noise for the two individual projects to less-than-significant levels. The contribution of both individual development projects with mitigation to the cumulative construction noise impact could therefore be considerable. This cumulative impact is ***significant and unavoidable with mitigation***. No additional mitigation measures have been identified.

Impact C-NOI-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of excessive ground-borne vibration or ground-borne noise levels during construction. (Less than Significant)

With regard to the potential for a cumulative vibration-related damage impact to occur, because vibration impacts are based on instantaneous PPV levels, worst-case ground-borne vibration levels from construction are generally determined by whichever individual piece of equipment generates the highest vibration levels. Unlike the analysis for average noise levels, in which noise levels of multiple pieces of equipment can be combined to generate a maximum combined noise level, instantaneous peak vibration levels do not combine in this way. Vibration from multiple construction sites, even if they are located close to one another, would not be expected to combine to raise the maximum PPV. For this reason, the cumulative impact of construction vibration from multiple construction projects located near one another would generally not combine to increase vibration levels. In essence, vibration effects are highly localized.

Vibration effects resulting from construction of subsequent development projects under the Hub Plan (including streetscape and street network improvements) and the two individual development projects (which would not use pile drivers) would not be expected to combine with vibration effects from cumulative projects in the Hub Plan vicinity. Therefore, cumulative ground-borne vibration impacts related to both potential damage effects and annoyance would be considered ***less than significant*** for the Hub Plan (including the streetscape and street network improvements) and the two individual development projects.

Impact C-NOI-3. Operation of the Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Less than Significant with Mitigation)

VEHICULAR TRAFFIC NOISE

To determine the potential cumulative noise impacts in the Hub Plan area, vehicular traffic volumes from the baseline 2020 scenario were compared to the 2040 with-project scenario. Because measured noise levels in the Hub Plan area were all greater than 60 dB, a cumulative traffic noise impact would occur if an increase of more than 3 dB from baseline (2020, no project) to future cumulative (2040, with project) noise levels occurs.

If a cumulative vehicular traffic noise impact is anticipated along a given roadway segment, then the proposed project’s contribution to that impact must be assessed.

A preliminary screening analysis was conducted to determine which of the 322 analyzed roadway segments would experience a doubling of vehicular traffic (or more) from baseline 2020 no-project to 2040 with-project conditions (noting that this generally results in a noise increase of 3 dB). Of the 322 segments, 35 were determined to experience at least a doubling in traffic. Traffic noise for these 35 segments were quantitatively modeled. Refer to **Table 3.C-27** for the results of the cumulative traffic noise analysis.

As shown in **Table 3.C-27**, a significant cumulative impact would occur along 28 of the 35 quantitatively modeled street segments. To determine if the Hub Plan would result in a cumulatively considerable contribution to any of these cumulative traffic noise impacts, modeled results for the 2040 no-project scenario were compared to the 2040 with-project scenario. The incremental effect of the Hub Plan on cumulative traffic noise is shown in **Table 3.C-28**, p. 3.C-84.

As shown in **Table 3.C-28**, p. 3.C-84, the plan would result in a 0 to 0.4 dB increase in (or, in some cases, a decrease in) traffic noise along the segments determined to have potential cumulative traffic noise impacts. Therefore, although cumulative vehicular traffic noise impacts in the Hub Plan area may occur, the contribution of the Hub Plan would be minimal (less than a 0.4 dB increase). Traffic increases resulting from the Hub Plan would not result in a cumulatively considerable contribution to any cumulative vehicular traffic noise impacts.

With regard to streetscape and street network improvements, potential roadway changes would not result in increased noise because these improvements would not result in increased vehicle trips. In addition, these improvements would not reduce the separation between sensitive receptors and traffic lanes. For these reasons, the streetscape and street network improvements would not result in noise that would combine with noise from cumulative traffic to result in a significant cumulative impact. Impacts are ***less than significant***.

THE SITING OF NOISE-GENERATING USES

Subsequent Development Projects under the Hub Plan

In general, most operational sources of noise do not generate noise that is perceptible far beyond the edge of a project site. However, it is possible that operational sources of noise for subsequent development projects under the Hub Plan, as well as other cumulative projects in the Hub Plan area, could generate noise in excess of allowable levels or result in a permanent increase in ambient noise levels. It is also possible noise-generating uses from subsequent development projects under the Hub Plan and other projects in the Hub Plan area could be located close enough to one another that operational (non-traffic) noise from multiple projects could combine and result in a cumulative noise impact. Therefore, because complete details about noise-generating uses for subsequent development projects under the Hub Plan and other nearby cumulative projects are not known, it is possible that noise from multiple subsequent development projects or sources could combine to cause a cumulative impact. Therefore, without mitigation, the Hub Plan would result in a cumulatively considerable contribution to this cumulative impact. Impacts are ***significant***.

TABLE 3.C-27. CUMULATIVE TRAFFIC NOISE ANALYSIS

Roadway	Segment Location	2020 No-Plan Baseline dBA L_{dn}	2040 with Plan dBA L_{dn}	2040 No Plan dBA L_{dn}	Increase from Baseline to 2040 with Plan dB	Cumulative Impact? ≥ 3 dB increase
11th Street	From Folsom Street to Harrison Street	51.5	54.9	55.2	**3.4**	**Yes**
11th Street	From Kissing Street to Folsom Street	58.0	61.0	60.5	**3.0**	**Yes**
11th Street	From Howard Street to Folsom Street	58.0	61.0	60.5	**3.0**	**Yes**
11th Street	From Natoma to Howard Street	56.4	59.4	58.7	**3.1**	**Yes**
12th Street	From Market Street to Otis Street	44.9	51.8	51.5	**6.9**	**Yes**
Brady Street	From Colton Street to Otis Street	55.5	58.6	57.8	**3.1**	**Yes**
Duboce Avenue	From Mission Street to Otis Street	50.5	53.5	52.9	**3.0**	**Yes**
Erie Street	East of Mission Street	47.2	50.0	49.5	2.8	No
Gough Street	From Market Street to Otis Street	48.4	52.0	51.2	**3.6**	**Yes**
Hayes Street	From Franklin Street to Van Ness Avenue	53.8	62.1	62.0	**8.3**	**Yes**
Hayes Street	Gough Street to Franklin Street	59.0	62.0	61.9	**3.1**	**Yes**
Hayes Street	From Octavia Street to Gough Street	51.1	57.5	57.4	**6.4**	**Yes**
Hickory Street	From Franklin Street to Van Ness Avenue	47.2	49.9	48.2	2.8	No
Ivy Street	From Octavia Street to Gough Street	48.5	55.2	55.1	**6.8**	**Yes**
Jessie Street	From 9th Street to 10th Street	49.5	55.5	55.5	**6.1**	**Yes**
Lafayette Street	From Mission Street to Minna Street	49.6	52.6	50.4	**3.0**	**Yes**
Linden Street	From Gough Street to Franklin Street	44.3	45.0	46.1	0.8	No
Linden Street	From Octavia Street to Gough Street	44.3	45.0	46.1	0.8	No
Minna Street	From 8th Street to Julia Street	45.9	51.2	51.1	**5.3**	**Yes**
Minna Street	From Howard Street to 8th Street	44.3	50.0	49.8	**5.8**	**Yes**
Minna Street	From Lafayette Street to 11th Street	43.8	44.3	44.0	0.5	No

TABLE 3.C-27. CUMULATIVE TRAFFIC NOISE ANALYSIS

Roadway	Segment Location	2020 No-Plan Baseline dBA L_{dn}	2040 with Plan dBA L_{dn}	2040 No Plan dBA L_{dn}	Increase from Baseline to 2040 with Plan dB	Cumulative Impact? ≥ 3 dB increase
Mission Street	From 10th Street to Grace Street	61.3	67.5	67.3	**6.2**	**Yes**
Mission Street	From Grace Street to Washburn Street	61.3	67.5	67.3	**6.2**	**Yes**
Mission Street	From Washburn Street to 9th Street	61.3	67.5	67.3	**6.1**	**Yes**
Natoma Street	From 7th Street to 8th Street	45.7	48.6	47.5	2.9	No
Oak Street	From Franklin Street to Van Ness Avenue	51.8	55.5	54.0	**3.7**	**Yes**
Octavia Street	From Haight Street to Waller Street (SB)	47.6	51.1	51.2	**3.5**	**Yes**
Octavia Street	From Rose Street to Haight Street	46.8	50.4	50.7	**3.7**	**Yes**
Octavia Street	From Page Street to Rose Street	46.8	50.5	50.8	**3.7**	**Yes**
Octavia Street	From Hayes Street to Linden Street (SB)	45.8	49.6	49.2	**3.8**	**Yes**
Octavia Street	Southbound south of Waller Street	45.6	50.1	50.0	**4.5**	**Yes**
Page Street	From Buchanan Street to Laguna Street	57.0	62.5	62.3	**5.5**	**Yes**
Plum Street	From Mission Street to South Van Ness Avenue	50.8	54.6	53.7	**3.8**	**Yes**
Stevenson Street	From McCoppin Street to Duboce Avenue	44.0	45.1	44.9	1.1	No
Valencia Street	From 15th Street to 14th Street	52.7	55.7	55.6	**3.0**	**Yes**

SB = southbound

TABLE 3.C-28. ANALYSIS OF CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO CUMULATIVE TRAFFIC NOISE IMPACTS

Roadway	Segment Location	2040 No Plan dBA L_{dn}	2040 with Plan dBA L_{dn}	Project/Plan Contribution Delta, dBA L_{dn}
11th Street	From Folsom Street to Harrison Street	55.2	54.9	0.3
11th Street	From Kissing Street to Folsom Street	60.5	61.0	-0.5
11th Street	From Howard Street to Folsom Street	60.5	61.0	-0.5
11th Street	From Natoma to Howard Street	58.7	59.4	-0.7
12th Street	From Market Street to Otis Street	51.5	51.8	-0.2
Brady Street	From Colton Street to Otis Street	57.8	58.6	-0.8
Duboce Avenue	From Mission Street to Otis Street	52.9	53.5	-0.6
Gough Street	From Market Street to Otis Street	51.2	52.0	-0.8
Hayes Street	From Franklin Street to Van Ness Avenue	62.0	62.1	-0.1
Hayes Street	Gouch Street to Franklin Street	61.9	62.0	-0.1
Hayes Street	From Octavia Street to Gough Street	57.4	57.5	-0.1
Ivy Street	From Octavia Street to Gough Street	55.1	55.2	-0.1
Jessie Street	From 9th Street to 10th Street	55.5	55.5	0.0
Lafayette Street	From Mission Street to Minna Street	50.4	52.6	-2.2
Minna Street	From 8th Street to Julia Street	51.1	51.2	-0.1
Minna Street	From Howard Street to 8th Street	49.8	50.0	-0.2
Mission Street	From 10th Street to Grace Street	67.3	67.5	-0.2
Mission Street	From Grace Street to Washburn Street	67.3	67.5	-0.2
Mission Street	From Washburn Street to 9th Street	67.3	67.5	-0.2
Oak Street	From Franklin Street to Van Ness Avenue	54.0	55.5	-1.5
Octavia Street	From Haight Street to Waller Street (SB)	51.2	51.1	0.1
Octavia Street	From Rose Street to Haight Street	50.7	50.4	0.3
Octavia Street	From Page Street to Rose Street	50.8	50.5	0.4
Octavia Street	From Hayes Street to Linden Street (SB)	49.2	49.6	-0.4
Octavia Street	Southbound south of Waller Street	50.0	50.1	0.0
Page Street	From Buchanan Street to Laguna Street	62.3	62.5	-0.1
Plum Street	From Mission Street to South Van Ness Avenue	53.7	54.6	-0.9
Valencia Street	From 15th Street to 14th Street	55.6	55.7	-0.1

Mitigation Measures

Implementation of Mitigation Measure M-NOI-4, Noise Analysis for Projects in Excess of Applicable Noise Standards (described previously) would be required.

Significance After Mitigation

Implementation of Mitigation Measure M-NOI-4, Noise Analysis for Projects in Excess of Applicable Noise Standards (described previously), would reduce potential conflicts between existing sensitive receptors and new noise-generating uses developed under the Hub Plan (e.g., noise associated with subsequent development projects) and would ensure that noise from the proposed noise-generating land uses under the Hub Plan would comply with applicable city standards. Therefore, with implementation of Mitigation Measure M-NOI-4, the contribution of the Hub Plan to this potential cumulative impact would not be considerable, and the impact would be ***less than significant with mitigation***.

Impact C-NOI-4. Operation of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Less than Significant)

VEHICULAR TRAFFIC NOISE

As shown in **Table 3.C-28**, p. 3.C-84, under the discussion of cumulative traffic noise impacts related to the Hub Plan, the Hub Plan would result in a 0.0 to 0.4 dB increase in (or, in some cases, a decrease in) traffic noise along the segments determined to have potential cumulative traffic noise impacts. Although cumulative vehicular traffic noise impacts in the Hub Plan area were determined to potentially occur, the Hub Plan would not result in a cumulatively considerable contribution to any cumulative vehicular traffic noise impacts. Because the 30 Van Ness Avenue and 98 Franklin Street projects would contribute only a small fraction of the total Hub Plan vehicular traffic volumes by 2040, these projects would also not result in a cumulatively considerable contribution to any cumulative traffic impacts. For this reason, the traffic increases resulting from the individual development projects would not result in a cumulatively considerable contribution to any cumulative vehicular traffic noise impacts. Impacts are ***less than significant***.

THE SITING OF NOISE-GENERATING USES

30 Van Ness Avenue and 98 Franklin Street Projects

In general, most operational sources of noise do not generate noise that is perceptible far beyond the edge of a project site. However, it is possible that operational sources of noise for subsequent development projects under the Hub Plan, as well as other cumulative projects in the Hub Plan area, could generate noise in excess of allowable levels or result in a permanent increase in ambient noise levels. It is also possible that noise-generating uses from subsequent development projects under the Hub Plan and other projects in the Hub Plan area could be located close enough to one another that operational (non-traffic) noise from multiple projects could combine and result in a cumulative noise impact. Therefore, as described under the cumulative impact discussion for the Hub Plan, it is possible that noise from multiple subsequent development projects or sources could combine to cause a cumulative impact. Therefore, cumulative impacts related to operational noise in the Hub Plan area are considered potentially significant.

With regard to the potential for the individual development projects to have a cumulatively considerable contribution to this cumulative impact, as discussed under Impact NOI-5, noise from emergency generators and HVAC equipment for the 30 Van Ness Avenue and 98 Franklin Street projects would be localized, would attenuate rapidly with distance, and would be shielded by solid screens or walls at least as tall as the equipment (which would break the line of sight between the equipment and adjacent uses). Noise levels were determined to be below the allowable levels, as defined by both section 2909(b) and 2909(d) of the noise ordinance. For these reasons, the individual development projects would result in a less-than-considerable contribution to cumulative noise impacts. This impact would be ***less than significant.***

3.D AIR QUALITY

This section addresses air quality impacts that could result from implementation of the Hub Plan,[1] the designation of all of the Hub Plan area as a Housing Sustainability District (HSD) and implementation of two individual development projects at 30 Van Ness Avenue and 98 Franklin Street.

Implementation of the Hub Plan and the Hub HSD would result in new planning policies to increase permitted heights and provide additional rezoning to have more consistent land use controls across the area and reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. With the exception of the streetscape and street network improvements and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, which are analyzed in this EIR at project-specific levels, the Hub Plan and Hub HSD would not itself result in immediate physical changes to the existing air quality conditions. Subsequent development projects under the Hub Plan would incentivize new development, which could result in existing land uses in the Hub Plan area being replaced over time.

This section discusses the existing air quality conditions in the Hub Plan area and vicinity, presents the regulatory framework for air quality management, and analyzes the potential for implementation of the proposed Hub Plan, the HSD and the two individual projects at 30 Van Ness Avenue and 98 Franklin Street to affect existing air quality conditions, both regionally and locally, due to activities that emit criteria and non-criteria air pollutants. It also analyzes the types and quantities of emissions that would be generated on a temporary basis due to construction activities as well as those generated over the long term due to development in the Hub Plan area, the Hub HSD, and the two individual projects. The analysis determines whether those emissions are significant in relation to applicable air quality standards and identifies feasible mitigation measures for significant adverse impacts. Emissions of greenhouse gases resulting from the proposed project's potential impacts on climate change and the state's goals for greenhouse gas emissions pursuant to Assembly Bill 32 and Senate Bill 32 were addressed in the initial study and determined to be less than significant (see Appendix B).

The study area for regional air quality impacts is the San Francisco Bay Area Air Basin (air basin). The study area for localized air quality impacts is the Hub Plan area as well as parcels within 1,000 meters (3,281 feet) of the Hub Plan area boundary.

The analysis in this section is based on a review of existing air quality conditions in the region and air quality regulations administered by the U.S. Environmental Protection Agency (EPA), the

---

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

California Air Resources Board (air resources board), and the Bay Area Air Quality Management District (air district). This analysis includes methodologies identified in the 2017 air district *CEQA Air Quality Guidelines* and the health risk assessment methodology published by the Office of Environmental Health Hazard Assessment (OEHHA) in 2015.[2,3]

The City and County of San Francisco (City) received no comments related to air quality on the notice of preparation (NOP) (Appendix A) issued for the Hub Plan, Hub HSD, and two individual development projects.

ENVIRONMENTAL SETTING

The Hub Plan area is within the San Francisco Bay Area Air Basin, which includes all of San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties, and the southern and southwestern portions, respectively, of Sonoma and Solano counties. The Bay Area Air Quality Management District is the regional agency responsible for air quality planning in the air basin.

CLIMATE AND METEOROLOGY

The air basin's moderate climate steers storm tracks away from the region for much of the year, although storms generally affect the region from November through April. San Francisco's proximity to the onshore breezes stimulated by the Pacific Ocean provides for generally good air quality in the Hub Plan area and the city as a whole.

Temperatures in the Hub Plan area vicinity average in the mid-50s annually, generally ranging from the low 40s on winter mornings to mid-70s during summer afternoons. Daily and seasonal oscillations of temperature are small because of the moderating effects of the San Francisco Bay. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from November through April. Precipitation may vary widely from year to year as a shift in the annual storm track of a few hundred miles can mean the difference between a wet year and drought conditions.

Atmospheric conditions—such as wind speed, wind direction, and air temperature gradients—interact with the physical features of the landscape to determine the movement and dispersal of air pollutants regionally. The Hub Plan area lies within the Peninsula climatological subregion. Marine air traveling through the Golden Gate is a dominant weather factor affecting dispersal of

2 Bay Area Air Quality Management District, CEQA Air Quality Guidelines, updated May 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en*, accessed April 18, 2019.

3 California Environmental Protection Agency, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment*, February 2015, *http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf*, accessed October 12, 2016.

air pollutants within the region. Wind measurements collected on the San Francisco mainland indicate a prevailing wind direction from the west and an average annual wind speed of 10.6 miles per hour.[4] Increased temperatures create the conditions in which ozone formation can increase.

AMBIENT AIR QUALITY – CRITERIA AIR POLLUTANTS

As required by the 1970 federal Clean Air Act, the EPA initially identified six criteria air pollutants that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. EPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six criteria air pollutants originally identified by EPA. Since that time, subsets of particulate matter have been identified for which permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM_{10}) and particulate matter of 2.5 microns in diameter or less ($PM_{2.5}$). Refer to the Regulatory Framework section for further detail with respect to state and federal air quality standards for specific pollutants and their attainment status within the air basin.

The region's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. **Table 3.D-1** presents a five-year summary for the period 2013 to 2017 of the highest annual criteria air pollutant concentrations, collected at the air quality monitoring station operated and maintained by the air district at Sixteenth and Arkansas streets, in San Francisco's lower Potrero Hill area, which is the closest monitoring station to the Hub Plan area, one mile to the south. **Table 3.D-1** also compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (state or federal). Concentrations shown in bold indicate only a local exceedance of the standard and do not reflect the attainment status for the air basin (see **Table 3.D-2,** p. 3.D-5, for the air basin's attainment status for each criteria air pollutant). **Table 3.D-1** does not include SO_2 because monitors are not required for the Bay Area as the air basin has never been designated as nonattainment for SO_2.

---

4 Available *http://www.wrcc.dri.edu/htmlfiles/westwinddir.html#CALIFORNIA*, accessed October 11, 2016.

TABLE 3.D-1. SUMMARY OF SAN FRANCISCO AIR QUALITY MONITORING DATA (2013–2017)

Pollutant	Most Stringent Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured[1]				
		2013	2014	2015	2016	2017
Ozone						
Maximum 1-Hour Concentration (ppm)	>0.09 [2]	0.069	0.079	0.085	0.070	0.087
Days 1-Hour Standard Exceeded		0	0	0	0	0
Maximum 8-Hour Concentration (ppm)	>0.070 [2, 3]	0.059	0.069	0.067	0.057	0.054
Days 8-Hour Standard Exceeded		0	0	0	0	0
Carbon Monoxide (CO)						
Maximum 1-Hour Concentration (ppm)	>20 [2]	1.8	1.6	1.8	1.7	2.5
Days 1-Hour Standard Exceeded		0	0	0	0	0
Maximum 8-Hour Concentration (ppm)	>9.0 [2, 3]	1.4	1.2	1.3	1.1	1.4
Days 8-Hour Standard Exceeded		0	0	0	0	0
Respirable Particulate Matter (PM_{10})						
Maximum 24-Hour Concentration ($\mu g/m^3$)	>50 [2]	44	36	47	29	**77**
Days 24-Hour Standard Exceeded[4]		0	0	0	0	2
Fine Particulate Matter ($PM_{2.5}$)						
Maximum 24-Hour Concentration ($\mu g/m^3$)	>35 [3]	**49**	33	35	19.6	**49.9**
Days 24-Hour Standard Exceeded		2	0	0	0	7
Annual Average ($\mu g/m^3$)	>12 [2, 3]	10.1	7.7	9.6	7.5	9.7
Nitrogen Dioxide (NO_2)						
Maximum 1-Hour Concentration (ppm)	>0.100 [3]	0.07	0.08	0.07	0.06	0.07
Days 1-Hour Standard Exceeded		0	0	0	0	0

Source: Air District, Bay Area Air Pollution Summary, 2013–2017

Notes: **Boldface** values are in excess of applicable standard; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; > = greater than

1. Number of days exceeded is for all days in a given year, except for PM_{10}, which has been monitored once every 12 days as of January 2013.
2. State standard, not to be exceeded.
3. Federal standard, not to be exceeded.
4. Based on a sampling schedule of 1 out of every 12 days, for a total of approximately 30 samples per year.

TABLE 3.D-2. STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

		State (CAAQS[1])		Federal (NAAQS[2])	
Pollutant	**Averaging Time**	**Standard**	**Attainment Status**	**Standard**	**Attainment Status**
Ozone	1-hour	0.09 ppm	**N**	NA	See note 3
	8-hour	0.070 ppm	**N**	0.070 ppm[4]	**N**[5]
Carbon Monoxide (CO)	1-hour	20 ppm	A	35 ppm	A
	8-hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	A	0.100 ppm	A[6]
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	0.075 ppm	See note 7
	24-hour	0.04 ppm	A	0.14 ppm	See note 7
	Annual	NA	NA	0.03 ppm	See note 7
Particulate Matter (PM_{10})	24-hour	50 $\mu g/m^3$	**N**	150 $\mu g/m^3$	U
	Annual[8]	20 $\mu g/m^3$	**N**[9]	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24-hour	NA	NA	35 $\mu g/m^3$	**N**
	Annual	12 $\mu g/m^3$	**N**[9]	12 $\mu g/m^3$	U/A
Sulfates	24-hour	25 $\mu g/m^3$	A	NA	NA
Lead	30-day	1.5 $\mu g/m^3$	A	NA	NA
	calendar quarter	NA	NA	1.5 $\mu g/m^3$	A
	Rolling 3-month average	NA	NA	0.15	U[10]
Hydrogen Sulfide	1-hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8-hour	See[11]	U	NA	NA

Sources: Air District, Standards and Attainment Status, last updated January 5, 2017; EPA National Ambient Air Quality Standards, last updated December 20, 2016.

Notes: A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

1. CAAQS = California ambient air quality standards. CAAQS for ozone, CO (except Lake Tahoe), SO2 (1-hour and 24-hour), NO_2, PM, and visibility-reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

2. NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentration is 0.07 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile is less than the standard.

3. EPA revoked the national 1-hour ozone standard on June 15, 2005.

4. This federal 8-hour ozone standard was approved by EPA in October 2015 and became effective on December 28, 2015.

5. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per

TABLE 3.D-2. STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

year, averaged over three years, is equal to or less than 0.070 ppm. EPA made recommendations on attainment designations for California on October 3, 2016.

6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

7. On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO2 NAAQS, however, must continue to be used until one year following EPA initial designations of the new 1-hour SO2 NAAQS. EPA classified the San Francisco Bay Area Air Basin as being in Attainment/Unclassifiable in January 2018 (*Federal Register* Vol. 83, No. 6, pp. 1098-1172).

8. State standard = annual geometric mean; national standard = annual arithmetic mean.

9. In June 2002, the California Air Resources Board established new annual standards for $PM_{2.5}$ and PM_{10}.

10. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

11. Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

OZONE

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds or VOC by some regulating agencies) and nitrogen oxides (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.

According to published data, and as shown in **Table 3.D-1**, p. 3.D-4, the most stringent applicable standards for ozone (state 1-hour standard of 0.09 parts per million [ppm] and the federal 8-hour standard of 0.070 ppm) were not exceeded in San Francisco between 2013 and 2017. In 2015, the EPA strengthened the 8-hour ozone standard to 0.070 ppm, and the new standard became effective December 28, 2015.

CARBON MONOXIDE

CO is an odorless, colorless gas usually formed as a result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in **Table 3.D-1**,

p. 3.D-4, the more stringent state CO standards were not exceeded in San Francisco between 2013 and 2017. Measurements of CO indicate hourly maximums ranging between 8 and 10 percent of the more stringent state standard, and maximum 8-hour CO levels that are approximately 12 to 16 percent of the allowable 8-hour standard.

PARTICULATE MATTER (PM_{10} AND $PM_{2.5}$)

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from man-made and natural sources. Particulate matter regulated by the state and federal Clean Air Acts is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about one-half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the air resources board, studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children." The air resources board also reports that statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.

Among the criteria pollutants that are regulated, particulates appear to represent a serious ongoing health hazard. As long ago as 1999, the air district was reporting, in its CEQA Air Quality Guidelines, that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area. High levels of particulate matter can exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.

As shown in **Table 3.D-1**, p. 3.D-4, the state 24-hour PM_{10} standard was exceeded on two monitored occasions between 2013 and 2017 in San Francisco, both in 2017 during the wildfire period in the counties to the north of San Francisco (it is likely that once data is available for 2018, it will also show an exceedance of the state 24-hour PM_{10} standard due to wildfire smoke from the Camp fire during November 2018). It is estimated that the state 24 hour PM_{10} standard of 50 micrograms per cubic meter ($\mu g/m^3$) was exceeded on up to 24 days per year between 2013 and 2017. The federal 24-hour $PM_{2.5}$ standard was exceeded up to nine times between 2013 and 2017. The federal and state annual average $PM_{2.5}$ standards were not exceeded between 2013 and 2017.

$PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways and high-traffic roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and lung development in children.[5]

NITROGEN DIOXIDE

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of the air on high-pollution days, especially in conjunction with high ozone levels. The current state 1-hour standard for NO_2 (0.18 ppm) is being met in San Francisco. In 2010, the EPA implemented a new 1-hour NO_2 standard (0.10 ppm), which is presented in **Table 3.D-2** p. 3.D-5. Currently, the air resources board is recommending that the San Francisco Bay Area Air Basin be designated as an attainment area for the new standard.[6] As shown in **Table 3.D-1**, p. 3.D-4, this new federal standard was not exceeded at the San Francisco station between 2013 and 2017.

The EPA has also established requirements for a new monitoring network to measure NO_2 concentrations near major roadways in urban areas with a population of 500,000 or more. Sixteen new near-roadway monitoring sites are required in California, three of which are in the Bay Area. These monitors are located in Berkeley, Oakland, and San Jose. The Oakland station commenced operation in February 2014, the San Jose station in March 2015, and the Berkeley station in July 2016. The new monitoring data may result in a need to change area designations in the future. The air resources board will revise the area designation recommendations, as appropriate, once the new monitoring data become available.

SULFUR DIOXIDE

SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of

---

5 San Francisco Department of Public Health, Assessment and Mitigation of Air Pollutant Health Effect from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review, May 2008, p. 7. Available at *https://www.gsweventcenter.com/Draft_SEIR_References/2008_0501_SFDPH.pdf.*

6 California Air Resources Board, Recommended Area Designations for the 2010 Nitrogen Dioxide Standards, Technical Support Document, January 2011, https://www.arb.ca.gov/desig/NO2_Enclosure_1.pdf, accessed August 6, 2018.

acute and chronic respiratory disease.[7, 8] Sulfur dioxide monitoring was terminated at the San Francisco station in 2009 because the state standard for SO_2 is being met in the Bay Area, and pollutant trends suggest that the air basin will continue to meet this standard for the foreseeable future.

In 2010, the EPA implemented a new one-hour SO_2 standard presented in **Table 3.D-2,** p. 3.D-5. The EPA has initially designated the air basin as an attainment area for SO_2. Similar to the new federal standard for NO_2, the EPA has established requirements for a new monitoring network to measure SO_2 concentrations beginning in January 2013.[9] No additional SO_2 monitors are required for the Bay Area because the air basin has never been designated as nonattainment for SO_2 and no State Implementation Plan (SIP) or maintenance plans have been prepared for SO_2.[10]

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which put children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated.

Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, EPA strengthened the national ambient air quality standard for lead by lowering it from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$. EPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas resulting in an increase in 76 monitors nationally.[11] Lead monitoring stations in the Bay Area are located at Palo Alto Airport, Reid-Hillview Airport (San Jose) and San Carlos Airport. Non-airport locations for lead monitoring are Redwood City and San Jose.

---

7 Bay Area Air Quality Management District, *CEQA Guidelines*, p. B-2.

8 Bay Area Air Quality Management District, CEQA Air Quality Guidelines, updated May 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en*, accessed April 18, 2019.

9 EPA, Fact Sheet: Revisions to the Primary National Ambient Air Quality Standard, Monitoring Network, and Data Reporting Requirements for Sulfur Dioxide, https://www.epa.gov/so2-pollution/fact-sheets-and-additional-information-regarding-primary-national-ambient-air-quality.

10 Bay Area Air Quality Management District, *2012 Air Monitoring Network Plan*, July 2013. Available at *http://www.baaqmd.gov/~/media/Files/Technical%20Services/2012_Network_Plan.ashx*; p. 30.

11 EPA, Fact Sheet Revisions to Lead Ambient Air Quality Monitoring Requirements, *https://www.epa.gov/sites/production/files/2016-03/documents/leadmonitoring_finalrule_factsheet.pdf*.

AIR QUALITY INDEX

EPA developed the Air Quality Index (AQI) to make the public health impacts of air pollution concentrations easily understandable. The AQI, much like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500. The numbers are divided into six color-coded ranges, with numbers 0–300 as outlined below:

- Green (0–50) indicates "good" air quality. No health impacts are expected when air quality is in the green range.
- Yellow (51–100) indicates air quality is "moderate." Unusually sensitive people should consider limited prolonged outdoor exertion.
- Orange (101–150) indicates air quality is "unhealthy for sensitive groups." Active children and adults, and people with respiratory disease, such as asthma, should limit outdoor exertion.
- Red (151–200) indicates air quality is "unhealthy." Active children and adults, and people with respiratory disease, such as asthma should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
- Purple (201–300) indicates air quality is "very unhealthy." Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit outdoor exertion.

The AQI numbers refer to specific amounts of pollution in the air, and are based on the federal air quality standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10} and $PM_{2.5}$. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the AQI chart. If the concentration of any of these pollutants rises above its respective standard, it can be unhealthy for the public. In determining the air quality forecast, local air districts, including the air district, use the anticipated concentration measurements for each of the major pollutants, convert them into AQI numbers, and determine the highest AQI for each zone in a district.

Readings below 100 on the AQI scale would not typically affect the health of the general public (although readings in the moderate range of 50 to 100 may affect unusually sensitive people). Levels above 300 rarely occur in the United States, and readings above 200 have not occurred in the Bay Area in decades, with the exception of the October 2017 and November 2018 wildfires north of San Francisco.[12] As a result, the Air Quality Index in several neighboring counties reached the "very unhealthy" and "hazardous" designations, ranging from values of 201 to above 350. During those periods, the air district issued "Spare the Air" alerts and recommended that individuals stay inside with windows closed and refrain from significant outdoor activity.

---

12 Bay Area Air Quality Management District, *http://www.baaqmd.gov/about-air-quality/current-air-quality*, accessed March 4, 2019.

AQI statistics over recent years indicate that air quality in the Bay Area is predominantly in the "Good" or "Moderate" categories and healthy on most days for most people. Historical air district data indicate that the San Francisco Bay Area Air Basin experienced air quality in the red level (unhealthy) on seven days between 2013 and 2017. As shown in **Table 3.D-3**, the air basin had a total of 14 red or orange-level (unhealthy or unhealthy for sensitive groups) days in 2013, 10 days in 2014, 12 days in 2015, 12 days in 2016, and 7 days in 2017 (statistics from 2018 are not included in this dataset).

TABLE 3.D-3. AIR QUALITY INDEX STATISTICS FOR THE SAN FRANCISCO BAY AREA AIR BASIN

	Number of Days by Year				
Air Quality Index Levels	**2013**	**2014**	**2015**	**2016**	**2017**
Unhealthy for Sensitive Groups (Orange)	13	9	12	11	3
Unhealthy (Red)	1	1	0	1	4

Source: Bay Area Air Quality Management District, 2018.

TOXIC AIR CONTAMINANTS AND LOCAL HEALTH RISKS AND HAZARDS

In addition to criteria air pollutants, plans and individual projects may directly or indirectly emit toxic air contaminants (TACs), which collectively refers to a diverse group of air pollutants that are capable of causing chronic (i.e., long-duration) and acute (i.e., severe but short term) adverse effects on human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards; instead, TACs are regulated by the air district using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered, together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[13]

Exposure assessment guidance published by the air district in January 2016 adopts the assumption that residences would be exposed to air pollution 24 hours per day, 350 days per

13 In general, a health risk assessment is required if the air district concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant of the project that would emit TACs is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

year, for 30 years.[14] Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to $PM_{2.5}$ are strongly associated with mortality, respiratory diseases, and reductions in lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.[15] In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern. The air resources board identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.[16] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

San Francisco Modeling of Air Pollution Exposure Zones

In an effort to identify areas of San Francisco that are most adversely affected by sources of TACs, San Francisco partnered with the air district to inventory and assess air pollution and exposure from mobile, stationary, and area sources within San Francisco. Areas with poor air quality, termed "Air Pollutant Exposure Zones" (APEZs), were identified, based on the following health-protective criteria: (1) cancer risk greater than 100 per 1 million from the contribution of emissions from all modeled sources or (2) cumulative $PM_{2.5}$ concentrations greater than 10 $\mu g/m^3$. The APEZ is expanded in certain geographic health vulnerable[17] zip codes (including portions of the Hub Plan area) to be more protective, with the areas included in the APEZ based on a standard that is 10 percent more stringent than elsewhere in the city (i.e., areas where the cancer risk exceeds 90 in 1 million or the $PM_{2.5}$ concentration exceeds 9 $\mu g/m^3$). The APEZ also includes all parcels within 500 feet of a freeway. **Figure 3.D-1** shows the location of the APEZ within and nearby the Hub Plan area. The APEZ is based on modeling that was prepared using a 20-meter by 20-meter receptor grid covering the entire city. The majority of the Hub Plan area is located within the APEZ, primarily because of high traffic volumes on Hub Plan area streets. There are also a number of individual sources of TACs in the Hub Plan area, including diesel generators, dry cleaners, auto body repair shops, and other light industrial activities. The APEZ criteria are further described below.

---

14 Bay Area Air Quality Management District, *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016. Available online at *http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en*. Accessed April 10, 2019.

15 SFDPH, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008.

16 California Air Resources Board, Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines," October 1998.

17 Health vulnerable areas were identified as those Bay Area zip codes in the worst quintile of Bay Area Health Vulnerability Scores. San Francisco Departments of Public Health and Planning. Memorandum Re: 2014 Air Pollutant Exposure Zone Map, April 9, 2014.

Source: San Francisco Planning Department 2019.

ICF Graphics ... 00700.17 (4-24-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.D-1
Air Pollutant Exposure Zone

FINE PARTICULATE MATTER

In April 2011, the EPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*. In this document, EPA staff conclude that the then current federal annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$. APEZs for San Francisco are based on the health-protective $PM_{2.5}$ standard of 11 $\mu g/m^3$, as supported by the EPA's *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*, although lowered to 10 $\mu g/m^3$ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

CANCER RISK

The greater than 100 per 1 million persons exposed (100 cancer risk) criterion for defining the Air Pollution Exposure Zone is based on EPA guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[18] As described by the air district, the EPA considers a cancer risk of 100 per million or less to be within the "acceptable" range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking,[19] EPA states that it "… strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in 1 million and (2) limiting to no higher than approximately one in ten thousand [100 in 1 million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." The 100-per-1-million cancer risk is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on the air district's regional modeling.[20]

In addition to monitoring criteria pollutants, both the air district and the air resources board operate TAC monitoring networks in the San Francisco Bay Area Air Basin. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air and therefore tend to produce the most substantial risk. The nearest air district ambient TAC monitoring station to the Hub Plan area is the station at Sixteenth and Arkansas Streets in San Francisco. **Table 3.D-4** shows ambient concentrations of carcinogenic TACs measured at the Arkansas Street station as well as the estimated cancer risks from a lifetime exposure (30 years) to these substances.

---

18 Bay Area Air Quality Management District, Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance, October 2009, p. 67.

19 54 *Federal Register* 38044, September 14, 1989.

20 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

TABLE 3.D-4. ANNUAL AVERAGE AMBIENT CONCENTRATIONS OF CARCINOGENIC TOXIC AIR CONTAMINANTS

Substance	Concentration[1]	Cancer Risk per Million[2]
Gaseous TACs (ppb)		
Acetaldehyde	0.69	10
Benzene	0.216	56
1,3-Butadiene	0.036	39
Carbon Tetrachloride	*	*
Chloroform	0.028	2
Para-Dichlorobenzene	*	*
cis-1,3-Dichloropropene	0.05	10
trans-1,3-Dichloropropene	0.05	10
Ethyl Benzene	0.11	3
Ethylene Dibromide	*	*
Ethylene Dichloride	*	*
Formaldehyde	1.64	35
Methyl Tertiary-Butyl Ether (MTBE)	*	*
Methylene Chloride	0.114	1
Perchloroethylene	0.009	1
Trichloroethylene	0.010	0.3
Polycyclic Aromatic Hydrocarbons (ng/m^3)		
Benzo(a)pyrene	*	*
Benzo(b)fluoranthene	*	*
Benzo(k)fluoranthene	*	*
Dibenz(a,h)anthracene	*	*
Indeno(1,2,3-cd)pyrene	*	*
Particulate TACs (ng/m^3)		
Arsenic	0.92	9
Beryllium	0.150	1
Cadmium	0.70	9
Chromium (hexavalent)	*	*
Lead	*	*
Nickel	3.2	2
Total Risk for All TACs		**188**

Source: California Air Resources Board, Annual Toxics Summaries by Monitoring Site (2017), https://www.arb.ca.gov/adam/toxics/sitesubstance.html.

Notes: TACs = toxic air contaminants; ppb = part per billion; ng/m^3 = nanograms per cubic meter; *= indicates that insufficient or no data were available to determine the value

1. Measured at air district monitoring station at 10 Arkansas Street in San Francisco.

2. The potential cancer risk estimates reflect the most recent risk assessment methodology finalized by the Office of Environmental Health Hazard Assessment on March 6, 2015. Information on the agency's new risk assessment methodology can be found at https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

When TAC measurements at this station are compared to ambient concentrations of various TACs for the Bay Area as a whole, the cancer risks associated with mean TAC concentrations in San Francisco are similar to those for the region. Therefore, the estimated average lifetime cancer risk resulting from exposure to TAC concentrations monitored at the San Francisco station does not appear to be any greater than that for the Bay Area as a region.

ROADWAY-RELATED POLLUTANTS

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions, which contain diverse particles and gases, contribute particulate matter by generating road dust through tire wear. Epidemiologic studies demonstrated that people living in proximity to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children. Air pollution monitoring conducted in conjunction with epidemiologic studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and nitrogen dioxide. In traffic-related studies, the additional non-cancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 300 feet.[21] As a result, the air resources board recommends that new sensitive land uses not be within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day.

DIESEL PARTICULATE MATTER

As discussed above, the air resources board 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 air resources board estimated average Bay Area cancer risk from exposure to diesel particulate, based on a population-weighted average ambient diesel particulate concentration, at about 480 in 1 million as of 2000, 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 air resources board, declined from 750 in 1 million in 1990 to 570 in 1 million in 1995; by 2000, the air board estimated the average statewide cancer risk from DPM at 540 in 1 million.[22, 23]

---

21 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005 (hereinafter "Air Quality and Land Use Handbook"). Available at https://ww3.arb.ca.gov/ch/handbook.pdf.

22 California Air Resources Board, *California Almanac of Emissions and Air Quality – 2009 Edition*, Table 5-44 and Figure 5-12, *http://www.arb.ca.gov/aqd/almanac/almanac09/chap509.htm*.

23 This calculated cancer risk value from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in 1 million, according to the American Cancer Society. (American Cancer Society, "Lifetime Probability of Developing or Dying from Cancer," last revised July 13, 2009, *http://www.cancer.org/docroot/CRI/content/CRI_2_6x_Lifetime_Probability_of_Developing_or_Dying_From_Cancer.asp*.)

In 2000, the air resources board approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent air resources board regulations apply to new trucks and diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same particulate exhaust emissions as one truck built in 1988.[24] The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. Despite notable emission reductions, the air resources board recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. The air resources board notes that these recommendations are advisory and should not be interpreted as defined "buffer zones," and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, the air resources board's position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.[25] Also see *San Francisco Health Code* article 38 discussed in the Regulatory Framework below.

Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, population subgroups with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases such as asthma and chronic obstructive pulmonary disease. The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. For example, lower income residents may be more likely to live in substandard housing and be more likely to live near industrial or roadway sources of air pollution.

The air district defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals and residential areas. Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas

---

24 Pollution Engineering, *New Clean Diesel Fuel Rules Start*, July 2006, http://docs.ppsmixeduse.com/ppp/DEIR_References/2006_0701_poll_engineering.pdf.

25 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, *http://www.arb.ca.gov/ch/handbook.pdf*.

because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions.

Land uses within the Hub Plan area are described in the Land Use and Planning section of the Initial Study (Appendix B to the EIR). As discussed in that section, the Hub Plan area is developed and highly urbanized, consisting of a wide variety of land uses. The following general land uses exist in the Hub Plan area: neighborhood-serving retail, non-residential mixed-use, residential, residential mixed-use, cultural/institutional/educational, office, and open space. Licensed child care centers in the Hub Plan area include Marin Day School and Bright Horizons at 1390 Market Street and Stevenson Child Care Center at 1320 Stevenson Street.

EXISTING STATIONARY SOURCES OF AIR POLLUTION

The air district's inventory of permitted stationary sources of emissions indicates that there are dozens of permitted stationary emission sources present within or near the Hub Plan area. These permitted stationary sources are primarily standby generators, dry cleaners, and other facilities such as auto body shops. These sources are included in the citywide modeling used to identify the APEZ.

MAJOR ROADWAYS CONTRIBUTING TO AIR POLLUTION

The air district's guidance indicates that roadways with vehicle volumes exceeding 10,000 average annual daily traffic (AADT) may impact sensitive receptors if within 1,000 feet of any receptor. This traffic contributes to elevated concentrations of $PM_{2.5}$, DPM, and other contaminants emitted from motor vehicles near the street level. A review of average daily roadway volumes from the San Francisco County Transportation Authority traffic model indicates that roadways with more than 10,000 AADT in the Hub Plan area and vicinity include I-80, Market Street, Mission Street, Howard Street, Folsom Street, and Van Ness/South Van Ness Avenue. This concentration of high-volume roadways within and proximate to the Hub Plan area is the primary reason that the majority of the Hub Plan area is identified as being within the APEZ.

ODORS

Sources that typically generate odors include wastewater treatment and pumping facilities; landfills, transfer stations, and composting facilities; petroleum refineries, asphalt batch plants, chemical (including fiberglass) manufacturing, and metal smelters; painting and coating operations; rendering plants; coffee roasters and food processing facilities; and animal feed lots and dairies. With the exception of auto body shops with spray booths, none of these uses exists in or near the Hub Plan area.

REGULATORY FRAMEWORK

FEDERAL REGULATIONS

The 1970 Clean Air Act (most recently amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

The current attainment status for the air basin, with respect to federal standards, is summarized in **Table 3.D-2,** p. 3.D-5. In general, the air basin experiences low concentrations of most pollutants when compared to federal standards, except for PM_{10}, and $PM_{2.5}$, for which standards are exceeded periodically (see **Table 3.D-2,** p. 3.D-5).

In June 2004, the air basin was designated as a marginal nonattainment area for the national eight-hour ozone standard.[26] EPA lowered the national eight-hour ozone standard from 0.80 to 0.75 parts per million (ppm) effective May 27, 2008. In April 2012, EPA designated the Bay Area as a marginal nonattainment[27] region for the 0.75 ppm ozone standard established in 2008.[28] The air basin is in attainment for other criteria pollutants, with the exception of the 24-hour standards for PM_{10} and $PM_{2.5}$, for which the air basin is designated as "Unclassified" and nonattainment, respectively. "Unclassified" is defined by the Clean Air Act as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant. The air basin is designated as an attainment area with respect to the federal annual average $PM_{2.5}$ standard.

STATE REGULATIONS

Although the federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution

---

26 See *https://archive.epa.gov/ozonedesignations/web/html/timeline.html*.

27 "Marginal nonattainment area" refers to those areas where the fourth highest reading over any 24-hour period in the past 3 years exceeds the 8-hour national ambient air quality standard for ozone at concentrations of between 0.076 and 0.086 ppm.

28 EPA, 2008 Ground-level Ozone Standards — Region 9 Final Designations, April 2012 *https://archive.epa.gov/ozonedesignations/web/html/region9f.html*.

sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological problems in California, there are many differences between the state and national ambient air quality standards, as shown in **Table 3.D-2**, p. 3.D-5. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in **Table 3.D-2**, p. 3.D-5, the air basin is designated as "nonattainment" for state ozone, PM_{10}, and $PM_{2.5}$ standards. The air basin is designated as "attainment" or "unclassified" for other pollutants.

TOXIC AIR CONTAMINANTS

In 2005, the air board approved a regulatory measure to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five minutes in any one hour. Buses or vehicles also must turn off their engines upon stopping at a school and must not turn on their engines more than 30 seconds before beginning to depart from a school. Also, Senate Bill 352 was adopted in 2003 to prevent public schools from being located within 500 feet of a freeway or busy traffic corridor (Education Code section 17213; Public Resources Code section 21151.8).

The air board has also adopted rules for new diesel trucks and for off-road diesel equipment. Along with rules adopted by the EPA, these regulations have resulted in substantially more stringent emissions standards for new diesel trucks and new off-road diesel equipment, such as construction vehicles. Effective January 2011, both EPA and the air board adopted so-called interim Tier 4 standards for new equipment with diesel engines of 175 horsepower or greater. The interim Tier 4 emissions standards for particulate matter are about 85 percent more restrictive than previous emissions standards (Tier 2 or Tier 3, depending on the size of the engine)[29] for these larger off-road engines. As a result, use of engines that meet the interim Tier 4 standards would reduce diesel exhaust emissions by approximately 85 percent, compared to new engines produced under the previous standards. Tier 2 or Tier 3 engines (for larger equipment, those manufactured since 2006) can achieve generally the same reduction through retrofitting by installation of a diesel particulate filter (an air board–certified Level 3 Verified Diesel Emissions Control System). Beginning in 2014, air board regulations require off-road equipment fleets to

---

29 For most construction equipment other than that with extremely powerful engines (greater than 750 horsepower), Tier 2 and Tier 3 emissions standards are the same with respect to particulate matter. Therefore, cancer risk from diesel particulate matter—a subset of all particulate matter—is essentially the same for Tier 2 and Tier 3 engines.

begin gradual replacement of older engines with newer, cleaner engines, the installation of exhaust filters on remaining older engines, or some combination of the two to achieve fleet-wide emissions reductions. Because only a certain percentage of each fleet's engines must be replaced or retrofitted on an annual or periodic basis to achieve the required emissions reductions, and because fleet turnover of heavy-duty off-road equipment takes many years, the full effect of the regulations on emissions reduction is not anticipated to be realized for some 20 years.

Regarding equipment already in use, the air board adopted rules for in-use off-road diesel vehicles—including construction equipment—in 2007. Those rules also limit idling to five minutes, require a written idling policy for larger vehicle fleets, and require that fleet operators provide information on their engines to the air board and label vehicles with an air board-issued vehicle identification number. The off-road rules require the retrofit or replacement of diesel engines in existing equipment. This "repowering" was originally to be required beginning in 2010 (for the largest fleets). However, in 2010, the air board delayed the start of repowering to 2014 for large fleets, 2017 for medium-sized fleets, and 2019 for small fleets.[30] The air board stated that the delayed implementation was justified because the recession had dramatically reduced emissions, and because the board staff found that the data on which the original rule was based had overestimated emissions. According to the air board, under the revised rules, DPM emissions from off-road equipment will decrease by more than 40 percent from 2010 levels by the year 2020, and by 2030, they will decrease by more than 75 percent.[31]

REGIONAL AND LOCAL REGULATIONS

BAY AREA AIR QUALITY PLANNING

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard).

The *Bay Area Clean Air Plan: Spare the Air, Cool the Climate* was adopted on April 19, 2017, by the Bay Area Air Quality Management District in cooperation with the Metropolitan Transportation Commission (MTC), the Bay Conservation and Development Commission (BCDC), and the Association of Bay Area Governments (ABAG), to provide a regional strategy to improve Bay

30 Fleet size is based on total horsepower (hp): large fleets are those with more than 5,000 hp, medium fleets have 2,501 to 5,000 hp, and small fleets are those with less than 2,500 hp.

31 California Air Resources Board, "Staff Report: Initial Statement of Reasons for Proposed Rulemaking: Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements," October 2010, p. 44, *http://ww3.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf*

Area air quality and meet public health goals.[32] The control strategy described in the 2017 Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate.

The 2017 Clean Air Plan addresses four categories of pollutants: ground-level ozone and its key precursors, ROG and NO_X; PM, primarily $PM_{2.5}$, and precursors to secondary $PM_{2.5}$; air toxics; and GHGs. The control measures are categorized based on the economic sector framework including stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water measures.

The air district is the regional agency with jurisdiction over the nine-county region located in the air basin. ABAG, MTC, county transportation agencies, cities and counties, and various non-governmental organizations also participate in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs. The air district is responsible for attaining and/or maintaining air quality in the region within federal and state air quality standards. Specifically, the air district has the responsibility to monitor ambient air pollutant levels throughout the region and to develop and implement strategies to attain the applicable federal and state standards. The air district has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, impose emission limits, set fuel or material specifications, or establish operational limits to reduce air pollutant emissions. The air district also regulates new or expanding stationary sources of toxic air contaminants and requires air toxic control measures (ATCM) for many sources emitting TACs.

San Francisco Construction Dust Control Ordinance

San Francisco Health Code article 22B and San Francisco Building Code section 106.A.3.2.6 collectively constitute the Construction Dust Control Ordinance (adopted in July 2008). The ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI). For projects over one-half acre and within 1,000 feet of sensitive receptor(s) (e.g., residences and group living quarters, schools, child care centers, and hospitals and other health-care facilities), and other projects as deemed necessary by the Director of Public Health, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan, with a goal of

32 Bay Area Air Quality Management District, 2017 Bay Area Clean Air Plan: Spare the Air, Cool the Climate. A Blueprint for Clean Air and Climate Protection in the Bay Area, April 19, 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en*, accessed May 25, 2018

minimizing visible dust, for approval by the San Francisco Department of Public Health (DPH) prior to issuance of a building permit by DBI. Such larger projects must also identify a compliance monitor and that person must be available at all times during construction activities.

Building permits will not be issued without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. The Construction Dust Control Ordinance requires project sponsors and contractors responsible for construction activities to control construction dust on the site or implement other practices that result in equivalent dust control that are acceptable to the Director of Public Health.

Dust suppression activities may include watering of all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by article 21, sections 1100 et seq., of the San Francisco Public Works Code.

Pursuant to Health Code article 22B, section 1247, all departments, boards, commissions, and agencies of the City and County of San Francisco that authorize construction or improvements on land under their jurisdiction under circumstances where no building, excavation, grading, foundation or other permits are required to be obtained under the building code shall adopt rules and regulations to ensure that the same dust control requirements that are set forth in this article are followed.

Health Code Article 38

San Francisco adopted article 38 of the San Francisco Health Code in 2008, and amended it in 2014, to protect new sensitive uses from existing sources of air pollution by requiring enhanced ventilation and filtration systems in certain areas of the city. The 2014 amendments make the health code and building code consistent with the results of the air quality modeling undertaken to identify the City's APEZ. As revised in 2014, article 38 applies to all development that includes "sensitive uses," as defined in the health code, including all residential units; adult, child and infant care centers; schools; and nursing homes. The revised article 38 considers all known existing sources of TACs and $PM_{2.5}$ at the time the modeling was conducted, and requires "enhanced ventilation," including filtration of outdoor air, for all such projects located in the APEZ. The filtration requirement of article 38 specifies Minimum Efficiency Reporting Value (MERV) 13 or equivalent, based on American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 52.2, and requires DPH to confer with other City departments and report to the San Francisco Board of Supervisors concerning technologies it has identified or evaluated that may comply with the requirements of the health code. Article 38 also requires periodic updating of the Air Pollutant Exposure Zone Map (about every five years) to account for changes in sources of TACs and $PM_{2.5}$ emissions or updated health risk quantification methodologies.

Clean Construction Ordinance

The City's Clean Construction Ordinance (San Francisco Environment Code chapter 25 and San Francisco Administrative Code section 6.25, as amended March 2015), applicable to City-funded projects that require the use of heavy off-road equipment for 20 days or more that are within 1,000 feet of any residence, school, child care center, health facility, or similar sensitive receptor, requires implementation of measures to reduce diesel emissions generated at publicly funded construction sites. Specifically, for projects within the APEZ (see p. 3.D-12), the ordinance requires the use of diesel engines that meet or exceed either EPA or air board Tier 2 off-road emission standards, and that are retrofitted with an air board Level 3 Verified Diesel Emissions Control Strategy (VDECS). Use of Tier 4 construction equipment automatically meet this requirement. Additionally, the ordinance prohibits the use of portable diesel engines where alternative sources of power are available (i.e., requires use of available utility-provided electricity in lieu of a diesel generator), limits idling of diesel engines, requires that equipment be properly maintained and tuned, and mandates submittal to the authorizing City department of a construction emissions minimization plan prior to the start of work. Waivers to the equipment requirements may be granted only if compliance is not feasible or in case of emergency. For projects outside the APEZ, the ordinance requires the use of biodiesel fuel grade B20[33] or higher for off-road diesel equipment and use of Tier 2 or similar off-road equipment.

Regulation of Odors

Air district Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. The regulation limits the "discharge of any odorous substance which causes the ambient air at or beyond the property line…to be odorous and to remain odorous after dilution with four parts of odor-free air." The air district must receive odor complaints from 10 or more complainants within a 90-day period in order for the limitations of this regulation to go into effect. If this criterion has been met, an odor violation can be issued by the air district if a test panel of people can detect an odor in samples collected periodically from the source.

IMPACTS AND MITIGATION MEASURES

This section describes the impact analysis related to air quality for the Hub Plan (including streetscape and street network improvements), the HSD and the two individual projects at 30 Van Ness Avenue and 98 Franklin Street. This section describes the methods used to determine impacts and lists the thresholds that were used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

33 B20 is a mixture of 20 percent biodiesel and 80 percent petroleum.

SIGNIFICANCE CRITERIA

The Hub Plan (including streetscape and street network improvements and subsequent development projects enabled under the Hub Plan), the individual development projects, and the Hub HSD would have a significant effect if they would result in any of the conditions listed below.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

APPROACH TO ANALYSIS

The Hub Plan is a regulatory program and would result in new planning policies and controls for land use to accommodate additional jobs and housing. With exception to the streetscape and street network improvements and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, the Hub Plan itself would not result in immediate physical changes to the existing environment. Effects from the Hub Plan could result as subsequent development projects allowed under the Hub Plan could replace existing residences and businesses, or increase space for residences or businesses in the Hub Plan area. As such, analysis of the Hub Plan and subsequent development projects enabled under the Hub Plan is programmatic, focusing on the environmental consequences of rezoning proposed by the Hub Plan. Analysis of the Hub Plan's streetscape and street network improvements and the two individual projects at 30 Van Ness Avenue and 98 Franklin Street is project-level, providing detailed information on the environmental effects of implementing these projects.

Implementation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations but would not require additional CEQA analysis. Because the Hub HSD would be a procedural change that would be shown as an overlay on zoning maps, no impacts would result from implementation of the HSD beyond those identified for the Hub Plan, and this project component is not discussed further.

The thresholds of significance used as the basis for determining criteria air pollutant and odor air quality impacts under CEQA are discussed below and are based on substantial evidence identified in Appendix D of the 2017 air district's CEQA Air Quality Guidelines[34] and its 2009 Justification Report.[35] As discussed below, the air district's CEQA Air Quality Guidelines identify different significance thresholds for plans versus projects. The analysis below contains both a Hub Plan–level and project-level analysis to address implementation of the Hub Plan and subsequent activities anticipated under the Hub Plan.

THE HUB PLAN (PROGRAM-LEVEL ANALYSIS)

The Hub Plan policy framework and rezoning is addressed at a program level. The following describes how Hub Plan–level air quality impacts are evaluated in this EIR and are based on the air district's CEQA Air Quality Guidelines for Hub Plan–level analysis.

Criteria Air Pollutants

The significance thresholds for assessment of a planning document, such as the proposed Hub Plan, involve an evaluation of whether:

- The Hub Plan would be consistent with the control measures contained in the current regional air quality plan (the 2017 Clean Air Plan), would support the primary objectives of that regional air quality plan and would not hinder implementation of that plan; the Hub Plan's growth in vehicle miles traveled (VMT) would not exceed its projected population growth; and the Hub Plan would not cause localized CO impacts.

If all foregoing questions can be answered in the affirmative, the proposed Hub Plan would not:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard.

Consistency with Clean Air Plan

The most recently adopted air quality plan for the air basin is the 2017 Clean Air Plan. The 2017 Clean Air Plan is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the 2017 Clean Air Plan, this analysis considers whether the project would (1) support the primary goals of the 2017 Clean Air Plan, (2) include applicable control measures

---

34 Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017. Table D-2.

35 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, pp. 22–76.

from the 2017 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2017 Clean Air Plan. To meet the primary goals, the 2017 Clean Air Plan recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The 2017 Clean Air Plan recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and greenhouse gases from motor vehicles is to channel future Bay Area growth into urban communities where goods and services are close at hand, and people have a range of viable transportation options. To this end, the 2017 Clean Air Plan includes 85 control measures aimed at reducing air pollution in the air basin.

Vehicle Miles Traveled and Population Growth Analysis

The threshold of significance for evaluation of an area plan's emissions of criteria air pollutants is based on consistency with regional air quality planning, including an evaluation of population growth and growth in VMT. For a proposed plan to result in less-than-significant criteria air pollutant impacts, an analysis must demonstrate that the plan's growth in VMT would not exceed the plan's population growth.

Local Carbon Monoxide Analysis

The air district has demonstrated, based on modeling, that in order to exceed the California ambient air quality standard of 9.0 ppm (eight-hour average) or 20.0 ppm (one-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Projects that do not result in 44,000 vehicles per hour in combination with background traffic (or 24,000 vehicles per hour where applicable), would not have the potential to result in a significant CO impact. The Hub Plan–level analysis is based on projected increases in vehicle trips at Hub Plan area intersections that would result from subsequent development projects (including vehicle trips that would be generated by the individual projects at 30 Van Ness Avenue and 98 Franklin Street) to determine whether the screening criteria of 44,000 vehicles per hour would be exceeded.

Community Risk and Hazard Impacts

This analysis responds to the criterion that asks whether the proposed Hub Plan would:

- Expose sensitive receptors to substantial pollutant concentrations.

The threshold of significance used to evaluate community health risks and hazards from new sources of TACs is based on the potential for the proposed Hub Plan to substantially affect the geography and severity of the APEZ at sensitive receptor locations. If the Hub Plan would result in sensitive receptor locations meeting the APEZ criteria that otherwise would not without the

Hub Plan and a $PM_{2.5}$ concentration above 0.3 μg/m³ or cancer risk greater than 10.0 per million, a significant impact would occur. The 0.3 μg/m³ $PM_{2.5}$ concentration and the cancer risk of 10.0 per million persons exposed are the levels below which the air district considers new sources not to make a considerable contribution to cumulative health risks.[36] For those locations already meeting the APEZ criteria, such as the majority of the Hub Plan area, a lower significance standard is required to ensure that the Hub Plan's contribution to existing health risks would not be significant. In these areas, if the Hub Plan's $PM_{2.5}$ concentration exceeds 0.2 μg/m³ or results in a cancer risk greater than 7.0 per million, a significant impact would occur.[37]

Odors

The Hub Plan would result in a significant impact with respect to odors if it would:

- Create objectionable odors affecting a substantial number of people.

For odors, a proposed land use plan must identify the location of existing and planned odor sources. The proposed land use plan must also include policies to reduce potential odor impacts if such sources are anticipated from the plan. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. The air district identifies a screening distance for new sources of potential odors, depending on use. In general, such setback distances would avoid the potential for significant odor impacts.

Subsequent Development Projects (Program-level Analysis), Individually Proposed Projects at 30 Van Ness Avenue and 98 Franklin Street, and Streetscape and street network Improvements (Project-level Analysis)

Criteria Air Pollutants and Precursors

For the analysis of subsequent development projects that would be enabled under the Hub Plan (other than the individual projects at 30 Van Ness Avenue and 98 Franklin Street, discussed below), the analysis is programmatic because specific project description information is unknown. A more detailed, project-level analysis is provided for the streetscape and street network improvements and individual proposed projects at 30 Van Ness Avenue and 98 Franklin Street. Both the programmatic and project-level analyses rely on quantitative thresholds of

---

36 Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines Update, Proposed Air Quality CEQA Thresholds of Significance*, May 3, 2010. Available at *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/summary_table_proposed_baaqmd_ceqa_thresholds_may_3_2010.pdf?la=en*

37 A 0.2 μg/m3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett, M., et al., Spatial Analysis of Air Pollution and Mortality in Los Angeles, *Epidemiology* 16 (2005): 727–736. The cancer risk has been proportionally reduced to result in a significance criteria of 7 per million persons exposed.

significance for criteria air pollutant analyses. **Table 3.D-5** summarizes these thresholds of significance. The substantial evidence supporting each threshold is provided below.

TABLE 3.D-5. CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS

	Construction Thresholds	Operational Thresholds	
Pollutant	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
Fugitive Dust	Construction Dust Ordinance	Not Applicable	

Ozone Precursors

As discussed previously, the air basin is currently designated as nonattainment for ozone, PM_{10}, and $PM_{2.5}$. The potential for an individual project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, is based on the state and federal Clean Air Acts' emissions limits for stationary sources. The federal New Source Review program was created under the federal Clean Air Act to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, air district Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors, ROG and NO_X, the offset emissions level is an annual average of 10 tons per year (or 54 pounds per day).[38] 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.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NO_X emissions as a result of increases in vehicle trips, architectural coating, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of development projects as well as the proposed streetscape and street network improvements. Projects that result in emissions below the thresholds would not be considered to contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in ROG and NO_X emissions. Because construction

38 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 17.

activities are temporary in nature, only average daily thresholds are applicable to construction-phase emissions.

Particulate Matter

The federal New Source Review emissions limits for stationary sources in nonattainment areas provide appropriate thresholds for particulate matter emissions. For PM_{10} and $PM_{2.5}$, the emissions limit under New Source Review is 15 tons per year (82 pounds per day) and 10 tons per year (54 pounds per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.[39] Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities; construction of the proposed streetscape and street network improvements would likewise result in such emissions. Therefore, the above thresholds can be applied to the construction and operational phases of development projects and to the construction of the streetscape and street network improvements. Those projects that result in emissions below the New Source Review emissions limits would not be considered to contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in PM_{10} and $PM_{2.5}$ emissions. Because construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Other Criteria Pollutants

Regional concentrations of CO in the Bay Area have not exceeded the state standards in the past 11 years and SO_2 concentrations have never exceeded the standards. The primary source of CO emissions from development projects is vehicle traffic. Construction-related SO_2 emissions represent a negligible portion of the total basin-wide emissions and construction-related CO emissions represent less than five percent of the Bay Area total basin-wide CO emissions.[40] As discussed previously, the air basin is in attainment for both CO and SO_2. The potential for the Hub Plan, streetscape and street network improvements, and subsequent development projects (including the individual projects at 30 Van Ness Avenue and 98 Franklin Streets) to result in significant CO impacts is addressed in the Hub Plan–level analysis because the Hub Plan–level analysis is based on the estimated amount of vehicle trips generated from anticipated subsequent development and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and considers the effect of streetscape and street network improvements. Therefore, additional programmatic or project-specific CO analysis is not required.

39 Ibid., p. 16.
40 Ibid., p. 27.

Fugitive Dust

Fugitive dust[41] emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly controls fugitive dust.[42] Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to 90 percent.[43] San Francisco's Construction Dust Control Ordinance requires a number of fugitive dust control measures to ensure that construction projects do not result in visible dust. Compliance with the Construction Dust Control Ordinance is the basis for determining the significance of fugitive dust emissions.

Compliance with the Construction Dust Control Ordinance ensures that fugitive dust emissions generated by projects during construction would neither:

- Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard; nor
- Expose sensitive receptors to substantial pollutant concentrations.

Health Risks and Hazards

Construction activities typically require the use of heavy-duty diesel vehicles and equipment, which emit DPM, a designated TAC. Development projects that require heavy-duty diesel vehicles and equipment, as well as projects that include stationary sources, such as a diesel backup generator, would result in emissions of DPM and possibly other TACs that may affect nearby sensitive receptors. Vehicle traffic generated by development projects also result in emissions of DPM and other TACs. Construction-phase TACs, however, would be temporary, and current health risk modeling methodologies are associated with longer-term exposure periods of 9, 30, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties with producing accurate modeling results.[44] However, within the APEZ additional emissions, whether from construction or operational activities would adversely affect populations that are already at a higher risk for adverse long-term health risks. Therefore, projects within the APEZ require special consideration to determine whether a project's activities would add emissions to areas already adversely affected by poor air quality. For health risks and hazards, the project-level significance thresholds are the same as the Hub Plan–level thresholds discussed above. Because the majority of the Hub Plan area is within an APEZ, an individual project that contributes $PM_{2.5}$ concentrations of

---

41 "Fugitive dust" is dust that is generated during construction and that escapes from a construction site.

42 Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, September 7, 2006. Available at *https://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf*.

43 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009; p. 27.

44 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 29.

0.2 μg/m^3 or greater or results in a cancer risk of 7.0 per million or greater would result in a significant impact.

CONSISTENCY WITH APPLICABLE AIR QUALITY PLAN

As discussed previously, the air district published the 2017 Clean Air Plan, the current applicable air quality plan for the air basin. Consistency with this plan is the basis for determining whether projects would conflict with or obstruct implementation of an applicable air quality plan. In determining whether a proposed project would conflict with the 2017 Clean Air Plan, three criteria are evaluated: (1) whether the project would support the primary goals of the 2017 Clean Air Plan*; (2)* whether the project implements the applicable control measures in the 2017 Clean Air Plan; and whether the project would disrupt or hinder implementation of any of these control measures.

ODORS

As noted above, the air district identifies a screening distance for new sources of potential odors, such as wastewater treatment plants, landfills and transfer stations, refineries, asphalt and chemical plants, food processing facilities, and the like, of one or two miles, depending on use.

CUMULATIVE AIR QUALITY IMPACTS

Regional air quality impacts are by their very nature cumulative impacts. Emissions from past, present and future projects contribute to adverse regional air quality impacts on a cumulative basis, and no single project is sufficiently large to result in nonattainment of ambient air quality standards. As described above, the project-level thresholds for criteria air pollutants are based on levels at which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. 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 cumulatively significant regional air quality impacts. As a result, no separate cumulative regional criteria air pollutant analysis is provided.

The cumulative health risk analysis considers the existing health risk in and around the Hub Plan area, the incremental effect of the Hub Plan, and the effects of other cumulative projects that may not be included in the citywide modeling conducted for determining the APEZ. Specifically, with regard to traffic emissions, the cumulative health risk analysis evaluates the incremental effect of the Hub Plan's increase in vehicle traffic, in addition to growth in background traffic under 2040 cumulative conditions, consistent with the transportation analysis.

Analysis Assumptions

Construction and Operational Assumptions for Streetscape and street network Improvements

The proposed streetscape and street network improvements would include the following types of activities: widening sidewalks; introducing bicycle lanes, protected bikeways, and vehicular traffic calming features, such as bulb-outs; upgrading streetlights and adding new signalized crossings; reconfiguring vehicular traffic lanes (including removal of one travel lane on a 400-foot-long segment of Duboce Street, between Stevenson and Mission streets) and street-side vehicular parking spaces; inserting new planted medians; and introducing new green spaces and street trees. The Hub Plan has developed design recommendations for several major streets within the Hub Plan area. Selected alleys would also be improved to enhance the experience for people walking. Air quality-related impacts of these improvements are analyzed here.

The scale of construction associated with streetscape and street network improvements would be relatively minor; typical construction would focus on one or two blocks at a time. Construction durations would vary from a maximum of approximately eight to 10 weeks per block on major streets within the Hub Plan area, for the more intensive streetscape and street network changes proposed on those blocks, to a low of four to six weeks for less-intensive improvements. Equipment that would be used for streetscape and street network improvements would be expected to move linearly along the street on which work is proposed rather than operate at the same location each day. Nighttime construction activities are not anticipated for the streetscape and street network improvements.

Although proposed streetscape and street network improvements under the Hub Plan would not generate vehicle trips, the removal of one travel lane on a 400-foot-long segment of Duboce Street would redistribute vehicle trips along the network and could result in increased vehicle delay (due to congestion). The potential for such a delay was evaluated to determine if criteria air pollutant emissions would increase.

Construction Assumptions for 30 Van Ness Avenue

The proposed construction plan for the 30 Van Ness Avenue Project is assumed to include one construction phase, consisting of several overlapping stages: demolition of portions of the building; excavation and shoring; foundation and below-grade construction; base buildings; exterior and interior finishing; and sidewalks and landscaping. The duration for partial demolition of the existing structure and construction of the proposed 30 Van Ness Avenue is estimated to be approximately 44 months, beginning in May 2020 and ending in December 2023. Construction would total approximately 1,149 working days occurring six days per week.[45]

---

[45] The number of working days does not double count for overlapping construction activities.

Demolition of the existing site is expected to begin in May 2020 and last for approximately six months. During this phase, portions of the existing site would be demolished and other portions would be retained and altered. The 30 Van Ness Avenue Project would require approximately 51,000 cubic yards of material to be off hauled. The demolition phase would be followed by the site preparation and grading phases, lasting three months each. Building construction is expected to begin in May 2021 and last until December 2023. Concurrently, paving and architectural coating would take place.

OPERATIONAL ASSUMPTIONS FOR 30 VAN NESS AVENUE

Construction of the 30 Van Ness Avenue Project is expected to be completed by the end of 2023, with operations expected to begin in January 2024 ("project build-out"). Operational emissions from the 30 Van Ness Avenue Project include, for example, emissions from onsite natural gas use, as well as mobile-source emissions from new vehicle traffic, consumer products, and testing of the two emergency generators. For purposes of air quality analysis, emergency generators were modeled conservatively assuming their location on a podium height of 120 feet and are assumed to operate 50 hours per year in accordance with air district permits.[46]

CONSTRUCTION ASSUMPTIONS FOR 98 FRANKLIN STREET

The proposed construction plan for the 98 Franklin Street Project is assumed to include one construction phase, consisting of several overlapping stages. Construction activities would begin with demolition of the existing parking lot. The duration for demolition of the existing parking lot and construction of the proposed 98 Franklin Street Project is estimated to be approximately 27 months, beginning in June 2021 and ending in August 2023. Construction would total approximately 569 working days, during which construction activities using off-road and on-road equipment would be conducted.

OPERATIONAL ASSUMPTIONS FOR 98 FRANKLIN STREET

Construction of the 98 Franklin Street Project is expected to be completed by August 2023, with operations expected to begin in September 2023. Operational emissions associated with the project include, for example, emissions from onsite natural gas use as well as mobile-source emissions from vehicle traffic, consumer products, and testing for one emergency generator. The 98 Franklin Street

---

46 Depending on the mix of office and residential in the Van Ness Avenue Project, the podium may be either approximately 120 feet or approximately 150 feet. For purposes of this analysis, emergency generators are modeled at the more conservative (i.e., worst case impact) height of 120 feet. The 120 foot podium yields the more conservative case because the majority of the Hub Plan–level receptors are located 1.8 meters (5.9 feet) above the ground. The podium closer to the ground would have greater impacts on these ground-level receptors. Within the 30 Van Ness Avenue project site and nearby buildings, receptors were modeled at varying elevations to capture the impacts at elevation. When comparing the two podium heights, the differences in maximum impacts from the generators on a 120-foot versus 150-foot podium height were minimal.

Project would have a backup generator on level 2, venting out to level 5. The generator is assumed to operate 50 hours per year in accordance with air district permits.

IMPACT EVALUATION

CLEAN AIR PLAN 2017 ANALYSIS (CONSTRUCTION AND OPERATIONS)

Impact AQ-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with or obstruct implementation of the 2017 Clean Air Plan. (Less than Significant)

The Hub Plan

As previously discussed, the most recently adopted air quality plan for the San Francisco Bay Area Air Basin is the 2017 Clean Air Plan.[47] The 2017 Clean Air Plan is a road map that demonstrates how the Bay Area will, in accordance with the requirements of the California Clean Air Act, implement all feasible measures to reduce ozone precursors (ROG and NO_X) and reduce transport of ozone and its precursors to neighboring air basins. It also provides a climate and air pollution control strategy to reduce ozone, PM, toxic air contaminants, and GHGs that builds upon existing regional, state and national programs.

In determining consistency with the 2017 Clean Air Plan, this analysis considers whether the proposed Hub Plan (including the proposed streetscape and street network improvements), subsequent development projects, and each of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street (as discussed below) would (1) support the primary goals of the 2017 Clean Air Plan, (2) include applicable control measures from the 2017 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2017 Clean Air Plan.

The primary goals of the 2017 Clean Air Plan are: to protect air quality and public health at the regional and local scale and protect the climate by reducing regional criteria air pollutant emissions; reducing local air-quality-related health risks (by meeting state and national ambient air quality standards); and reducing GHG emissions (by reducing GHG emissions to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050).[48]

To meet these goals, the 2017 Clean Air Plan has defined 85 individual control measures that describe specific actions to reduce emissions of air and climate pollutants across a full range of emission sources.[49] These control measures are grouped into the following sectors based upon the

---

47 Bay Area Air Quality Management District, 2017 Bay Area Clean Air Plan, April 19, 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en*, accessed February 20, 2019.

48 The air district's 2030 GHG target is consistent with the California's GHG 2030 reduction target, per Senate Bill 32. The air district's 2050 target is consistent with the state's 2050 GHG reduction target per Executive Order S-3-05.

49 Bay Area Air Quality Management District, 2017 Clean Air Plan, Table 5-13.

economic sector framework used by the Air Resources Board for the AB 32 Scoping Plan Update: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

The Hub Plan and its related actions would support the primary goals of the 2017 Clean Air Plan by supporting the applicable measures that aim to achieve these goals, as discussed below. It is noted that the vast majority of the control measures included in the 2017 Clean Air Plan do not apply directly to the Hub Plan and its related actions because they target facilities or land uses that do not currently exist and would not be permitted in the Hub Plan area (e.g., industrial, energy generation, waste management, agricultural, forest or pasture lands); vehicles or equipment that would not be employed in the Hub Plan area (e.g., airplanes, ships, and farming equipment); and/or involve rulemaking or other actions under the jurisdiction of agencies not directly involved with design and approval of the Hub Plan and its related actions.

In general, new development in San Francisco incorporates many of the applicable control measures identified in the 2017 Clean Air Plan through a combination of the planning code and building code (including green building code) provisions, and various local and state policies that promote high-density land use patterns, allow or require reduction of off-street parking facilities, encourage tree plantings and water and energy conservation, divert waste, and promote transit and bicycling as primary modes of transport. The Hub Plan would continue to support these measures and would not hinder their implementation. The most relevant and applicable measures that the Hub Plan would support (and thus, include as part of its implementation) are discussed in detail below.

For example, the transportation control measure TCM-D3, “Local Land Use Strategies,” calls for promoting and supporting land use patterns, policies, and infrastructure investments that support high-density mixed-use, residential, and employment development to facilitate walking, bicycling, and transit use. The compact, dense mixed-use development that would be encouraged by the proposed Hub Plan, in combination with the Hub Plan area having multiple transportation options that encourage residents, tenants, employees, and visitors to bicycle, walk, and use transit to and from the Hub Plan area instead of using private automobiles, would ensure consistency with this clean air plan control measure.

Transportation control measure TR13, “Parking Policies,” calls for encouraging parking policies and programs in local plans by reducing minimum parking requirements, limiting the supply of off-street parking in transit-oriented areas, unbundling the price of parking spaces and supporting implementation of demand-based pricing (such as “SF Park”) in high-traffic areas. The Hub Plan would achieve this through proposed planning code amendments that would limit off-street parking spaces to 0.25 per dwelling unit. Moreover, in December 2018, the city passed an ordinance that eliminated required parking minimums citywide for all uses. In addition, Planning Code section 169 would require project sponsors of subsequent development projects to develop and implement a Transportation Demand Management (TDM) plan to reduce the use of single-occupancy vehicles and encourage the use of transit and nonmotorized travel modes. Furthermore, the Hub Plan's proposed streetscape and street network improvements would encourage nonmotorized travel by widening sidewalks, introducing bicycle lanes, protected bikeways, and vehicular traffic calming features, such as bulb-outs, upgrading streetlights and adding new signalized crossings.

The building sector control measure BL1, "Green Buildings," calls for identifying barriers to effective local implementation of the CALGreen (Title 24) statewide building energy code and developing solutions to improve implementation/enforcement. Subsequent projects under the Hub Plan would be subject to the San Francisco Green Building Code and, as such, would comply with some of the most stringent building energy-related requirements in the country.

The waste sector control measure WA3, "Green Waste Diversion," calls for developing model policies to facilitate local adoption of ordinances and programs to reduce the amount of green waste going to landfills. The subsequent projects that would be implemented under the Hub Plan would support this measure by complying with the Mandatory Recycling and Composting Ordinance as well as requirements in the San Francisco Green Building Code to divert 75 percent of demolition debris from landfills.

As noted above, the Hub Plan and subsequent projects would support the primary goals of the 2017 Clean Air Plan by including the Hub Plan's applicable control measures, which are implemented through numerous regulations that are already established for new developments throughout the city and the proposed Hub Plan would not change those requirements. In addition, subsequent development projects in the Hub Plan area, including 30 Van Ness Avenue and 98 Franklin Street, would be required to implement various mitigation measures identified during the environmental review process that would further protect air quality and public health. These measures are described in detail, under Impacts AQ-4, AQ-5, AQ-7 and AQ-9.

As described above, the Hub Plan would strongly support all of the applicable control measures in the 2017 Clean Air Plan that are intended to help the Bay Area attain state and federal air quality standards. Regarding public health, although the Hub Plan would encourage new sensitive land uses, including residents in the APEZ, the Hub Plan area is also in proximity to numerous transit and other amenities that support a reduction in VMT and consequent mobile source emissions. Further, article 38 of the San Francisco Health Code (Enhanced Ventilation Required for Urban Infill Sensitive Use Developments Ordinance) is intended to reduce air quality health impacts to new residential uses in areas of poor air quality by requiring enhanced ventilation. New development in the Hub Plan area would be subject to this requirement, and therefore the Hub Plan would protect public health through required adherence to *Health Code* article 38.

Greenhouse gas emissions associated with the proposed Plan were discussed in the initial study where it is determined that the Hub Plan would be consistent with the Greenhouse Gas Reduction

Strategy, and therefore would result in less-than-significant impacts with regard to greenhouse gas emissions. As described in the initial study, under section E.8, Greenhouse Gas Emissions, development projects proposed in the Hub Plan area would be required to demonstrate consistency with San Francisco's *Strategies to Address Greenhouse Gas Emissions*, which presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's qualified GHG reduction strategy in compliance with CEQA Guidelines. Moreover, the Hub Plan would not otherwise disrupt or hinder implementation of the 2017 Clean Air Plan by, for example, precluding extension or expansion of bikeways or routes (on the contrary, the Hub Plan would enhance existing and planned bicycle lanes and provide bicycle facilities and infrastructure in the Hub Plan area); precluding extension of a transit line (the Hub Plan aims to enhance transit use); or providing excessive parking beyond parking requirements (the Hub Plan would limit the amount of parking allowed for new development projects).

In light of the above, the Hub Plan, including subsequent development projects and proposed streetscape and street network improvements, would be consistent with the 2017 Clean Air Plan control measures, would not hinder implementation of the Hub Plan, and would support the primary goals of the Hub Plan. Thus, the Hub Plan would not conflict with the 2017 Clean Air Plan and this impact would be ***less than significant***.

30 Van Ness Avenue and 98 Franklin Street Projects

The control measures identified in the 2017 Clean Air Plan that are most applicable to the individual projects at 30 Van Ness Avenue and 98 Franklin Street are those identified for the Hub Plan, above. Similar to subsequent development projects that would be subject to existing federal, state, and local regulations that already apply to new development projects in San Francisco, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would likewise meet the applicable 2017 Clean Air Plan measures discussed above (TCM-D3, TR13, BL1and WA3). Specifically, the locations of the project sites, and densities and mixed-use nature of each of the proposed projects would support TCM D3, "Local Land Use Strategies," which, as noted above, calls for promoting and supporting land use patterns, policies, and infrastructure investments that support high-density mixed-use, residential, and employment development to facilitate walking, bicycling, and transit use. Moreover, both projects would be required to implement a TDM plan and would meet bicycle parking requirements, which would reduce the use of single-occupancy vehicles and encourage the use of transit and nonmotorized travel modes. Other transportation-related features that would be included with the projects at 30 Van Ness Avenue and 98 Franklin Street include providing car-share parking spaces, pursuant to Planning Code section 166; unbundled parking, pursuant to Planning Code section 167; and installation of electric vehicle charging stations for at least 8 percent of the parking program, pursuant to San Francisco Green Building Code section 5.106.5. Many of the TDM measures and other features of both of these projects would align with the transportation control measures identified in Table 5-13 of the 2017 Clean Air Plan (e.g., TR2-Trip Reduction Programs, TR3-Local and Regional Bus Service, TR9-Bicycle and Pedestrian Access and Facilities, TR14-Cars and Light Trucks, and TR15-Public Outreach and Education).

The 98 Franklin Street Project would provide less off-street parking than is currently permitted by Planning Code section 151.1. The 30 Van Ness Avenue project sponsor would seek a planning code text amendment that would allow a mixed-use project in the Hub Plan area, providing at least 25 percent onsite (or 33 percent offsite) affordable housing to reallocate permitted vehicular parking spaces from nonresidential to residential land uses. Permitted vehicular parking for residential uses would be 0.25 space per unit, and permitted vehicular parking for nonresidential uses would be 7 percent of the occupied floor area. The 30 Van Ness Avenue Project would not exceed these amounts. Moreover, with a vehicular parking ratio well below 1:1 (one parking space per one dwelling unit), the 30 Van Ness Avenue Project would have a low parking ratio compared with regional parking ratios and thus would be consistent with the 2017 Clean Air Plan overall.

Individual development projects at 30 Van Ness Avenue and 98 Franklin Street would be required to comply with all applicable existing requirements that further the goals of the 2017 Clean Air Plan including: planting of trees along the project sites' perimeter sidewalks (NW2-Urban Tree Planting); adherence to local policies that promote composting and that aim to reduce waste for both construction and operations (WA3-Green Waste Diversion and WA4-Recycling and Waste Reduction); and implementation of a non-potable water reuse system in all proposed new and adaptively-reused buildings (WR2-Support Water Conservation)

In addition, the proposed projects' impact with respect to GHGs is discussed in the initial study (see EIR Appendix B, Topic E.7, Greenhouse Gas Emissions). As stated there, the projects at 30 Van Ness Avenue and 98 Franklin Street would be compliant with the City's Greenhouse Gas Reduction Strategy and thus, would not result in any significant impacts associated with an increase in GHGs or conflict with measures adopted for the purpose of reducing such emissions. The city's greenhouse gas compliance checklist for private projects lists regulatory requirements, many of which are related to transportation, energy conservation, waste reduction, and water conservation and would align with those specific sectors of the 2017 Clean Air Plan control measures.

Moreover, neither project would avoid or hinder the implementation of the control measures identified in the 2017 Clean Air Plan because they would not interfere with the City's ability to continue to enforce regulations for individual projects that seek to achieve the primary goals of the 2017 Clean Air Plan.

Conclusion

For the reasons described above, the Hub Plan (including the proposed streetscape and street network improvements), subsequent development projects, and individual development projects at 30 Van Ness Avenue or 98 Franklin Street would support the primary goals of the 2017 Clean

Air Plan, include applicable control measures from the 2017 Clean Air Plan as part of their implementation, and would not interfere with implementation of the 2017 Clean Air Plan. As all project components would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, this impact would be less than significant, and no mitigation measures are necessary.

Mitigation: None required.

CRITERIA AIR POLLUTANTS

Impact AQ-2. The Hub Plan would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Less than Significant)

The Hub Plan

As discussed in the Approach to Analysis section, in order for a proposed plan to result in less-than-significant criteria air pollutant impacts, an analysis must demonstrate that the plan would be consistent with the control measures contained in the current regional air quality plan (the 2017 Clean Air Plan), would support the primary objectives of that plan, and would not hinder implementation of that plan. Furthermore, analysis must demonstrate that the plan's growth in VMT would not exceed the plan's population growth, and the plan would not cause localized CO impacts.

As demonstrated in Impact AQ-1, the Hub Plan would be consistent with the applicable control measures contained in the 2017 Clean Air Plan, would support the primary objectives of that plan, and would not hinder implementation of the plan. The remainder of the analysis addresses the Hub Plan's growth in VMT and population and potential for localized CO impacts. This analysis is based on the Hub Plan–level thresholds identified by the air district in its CEQA Air Quality Guidelines.

Growth in Vehicle Miles Traveled Compared to Growth in Population

Growth projections prepared by the San Francisco Planning Department (and discussed under Analysis Assumptions in the Overview subsection of Chapter 3, Environmental Setting, Impacts, and Mitigation Measures) indicate that with implementation of the Hub Plan, Hub Plan area residential population would increase from approximately 8,100 in 2018 to 23,800, by 2040, the analysis horizon year. This represents an increase of 194 percent. Additionally, employment is projected to slightly decrease from about 13,200 under existing conditions to approximately 11,600 by 2040, a decrease of 12 percent. The combined population-employment ("service population") increase with implementation of the Hub Plan, would therefore be approximately 66 percent.

Based on output from the County Transportation Authority travel demand model, daily VMT to and from the Hub Plan area would increase by approximately 35 percent, from approximately 315,500 VMT under 2020 baseline conditions to approximately 426,600 VMT under 2020 Hub Plan conditions.

Because the growth in vehicle miles would be less than the growth in the Hub Plan's "service population," the Hub Plan would result in a less-than-significant impact with respect to regional criteria air pollutants. In addition, the development patterns that would be encouraged by the Hub Plan would reduce criteria pollutant emissions, compared with other potential development in the city or the region, by providing additional high-density, mixed-use development in a neighborhood with one of the most extensive arrays of transit service in the Bay Area and improving access for people walking and bicycling within, to, or from the Hub Plan area. In light of the analysis above, implementation of the Hub Plan would result in a ***less-than-significant*** impact with respect to regional emissions of criteria air pollutants.

Carbon Monoxide

Unlike other criteria pollutants, whose effects are regional, CO impacts are evaluated locally. However, the air district generally recommends intersection-specific modeling of CO concentrations only for intersections where traffic volumes would exceed 44,000 vehicles per hour, based on modeling of vehicle emissions demonstrating that below this volume of traffic CO concentrations would not exceed the applicable state air quality standards. Based on the traffic analysis completed for the Hub Plan, the maximum with Hub Plan peak-hour traffic volume at any of the study intersections in the transportation study area (South Van Ness Avenue at 13th Street) would be 5,390 vehicles per hour, and the maximum at any of the study intersections would be 6,260 vehicles per hour under 2040 cumulative conditions (also at South Van Ness Avenue at 13th Street). Therefore, because the maximum number of vehicles per hour is well below the screening criteria for quantitative CO analysis, modeling of CO concentrations is not required, and the Hub Plan would not be anticipated to exceed the state one-hour or eight-hour CO standards. Therefore, impacts related to CO would also be ***less than significant***.

As demonstrated in the above analysis, the Hub Plan would be consistent with the control measures contained in the current regional air quality plan (the 2017 Clean Air Plan), would support the primary objectives of the 2017 Clean Air Plan and would not hinder implementation of the 2017 Clean Air Plan. Additionally, the rate of growth in VMT with implementation of the Hub Plan would not exceed the Hub Plan's rate of population growth and the Hub Plan would not cause localized CO impacts. Therefore, the Hub Plan would not result in a cumulatively considerable net increase in criteria pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.

Mitigation: None required.

Impact AQ-3. The construction and operation of streetscape and street network improvements proposed as part of the Hub Plan would not result in a cumulatively considerable net increase in criteria pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Less than Significant)

Construction

As described in Chapter 2, Project Description, this EIR analyzes proposed streetscape and street network improvements at a project-specific level of detail. The streetscape and street network improvements that are proposed by the Hub Plan would include the following types of activities: widening sidewalks; introducing bicycle lanes, protected bikeways, and vehicular traffic calming features, such as bulb-outs; upgrading streetlights and adding new signalized crossings; reconfiguring vehicular traffic lanes (including removal of one 400-foot-long segment of Duboce Street, between Stevenson and Mission streets) and street-side vehicular parking spaces; inserting new planted medians; and introducing new green spaces and street trees. The Hub Plan has developed design recommendations for several major streets within the Hub Plan area. Selected alleys would also be improved to enhance the experience for people walking. Air quality-related effects of these improvements are analyzed here.

Construction activities to implement the streetscape and street network improvements would be required to comply with the Construction Dust Control Ordinance aimed at reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and avoid orders to stop work by DBI; in particular, section 1247 makes the ordinance specifically applicable to construction on City property even where no building code permit requirement is triggered. The ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. Compliance with the regulations and procedures set forth in the San Francisco Dust Control Ordinance would ensure that potential dust-related construction air quality impacts from the streetscape and street network improvements would be reduced to a less-than-significant level.

In terms of criteria air pollutant emissions associated with constructing the streetscape and street network improvements, these would be relatively minor, because, as noted above, under Analysis Assumption, typically one or two blocks of streetscape and street network improvements would be under construction at any given time, with the construction duration for the individual streetscape and street network improvements expected to last eight to 10 weeks per block, at most, for each improvement. Public projects such as the proposed streetscape and street network improvements would be subject to the conditions of the Clean Construction Ordinance. This ordinance requires that City-funded projects within the APEZ use diesel engines that meet or exceed either EPA or air board Tier 2 off-road emission standards and be retrofitted with an air board Level 3 verified diesel emissions control strategy (VDECS), prohibits the use of portable diesel engines where alternative sources of power are available (i.e., requires use of available utility-provided electricity in lieu of a diesel generator), limits idling of diesel engines, requires that equipment be properly maintained and tuned, and mandates submittal to the authorizing City department of a construction emissions minimization plan prior to the start of work. Compliance with the Clean Construction Ordinance, as is required, would reduce exhaust emissions of criteria air pollutants from construction of streetscape and street network improvement projects.

As part of preparation of the Central SoMa Plan EIR,[50] the planning department performed a quantitative analysis of construction-phase criteria air pollutants associated with streetscape and street network improvements that were proposed as part of that plan. The streetscape and street network improvements proposed under the Central SoMa Plan are similar to the types of streetscape and street network improvements that are proposed as part of the Hub Plan. That analysis assumed that one block of streetscape and street network construction could be completed in a single day to provide a conservative (i.e., higher) estimate of the daily emissions from construction activities. That analysis concluded that using conservative assumptions (inputs that would result in greater emissions), average daily construction criteria air pollutant emissions would be: 14 lbs/day for ROG; 24 lbs/day for NO_X, 1.3 lbs/day for PM_{10}, and 1.2 lbs/day for $PM_{2.5}$. These emissions levels are well below the significance criteria of 54 lbs/day for ROG, NO_X, and $PM_{2.5}$, and 82 lbs/day for PM_{10}. In addition, a quantitative analysis of construction criteria air pollutant impacts was conducted for the Sixth Street Improvement Project. This project would reduce the number of vehicular travel lanes from four to two, widen sidewalks on both sides of Sixth Street between Market and Howard streets, install new bulb outs at most intersections between Market and Howard streets, install raised crosswalks, new bicycle lanes on both sides of Sixth Street and install streetscape and street network elements such as street trees, lighting fixtures, bicycle racks etc. This project is similar to the more extensive streetscape and street network improvements proposed for the Hub Plan (specifically, street segment rather than alley improvements). The quantitative criteria air pollutant analysis determined that average daily construction criteria air pollutant emissions would be: 0.73 lbs/day for ROG, 13.37 lbs/day for NO_X, and 0.09 lbs/day for PM_{10} and $PM_{2.5}$.[51] The analysis for Sixth Street Improvement Project was based on specific construction equipment information provided by the SFMTA and as demonstrated above, the results indicate criteria air pollutant emissions for this similar project would likewise be well below significance thresholds.

---

50 Central SoMa Plan Draft Environmental Impact Report (Planning Department Case No. 2011.1356E), December 14, 2016, https://sfplanning.org/environmental-review-documents?field_environmental_review_categ_target_id=214&items_per_page=10, accessed on April 19, 2019.

51 Sixth Street Pedestrian Safety Project, Final Negative Declaration (Planning Department Case No. 2014.1010E), October 23, 2017, *http://sfmea.sfplanning.org/2014.1010E_FND.pdf*.

Although detailed construction information for the streetscape and street network improvements have not been developed for the Hub Plan, because the proposed streetscape and street network improvements under the Hub Plan would be similar to (and not more intensive than) those proposed in the Central SoMa Plan and the Sixth Street Improvement Project, for which quantitative analysis was conducted and determined that emissions would be well below the criteria air pollutant significance thresholds, the streetscape and street network improvements proposed in the Hub Plan too would result in ***less than significant*** construction-related criteria air pollutant emissions.

Mitigation: None required.

<u>Operation</u>

With regard to operational criteria air pollutant emissions, the proposed streetscape and street network improvements would include a variety of projects intended to enhance the experience for people walking and bicycling and to generally improve the visual quality and functionality of the public realm throughout the Hub Plan area. As noted above, such improvements would include sidewalk widening, creation or enhancements of bicycle lanes, installation of traffic calming features and reconfiguration of vehicular traffic lanes and street-side vehicular parking spaces.

In terms of travel lane reductions, the Hub Plan proposes to remove one of the three westbound lanes on a single, approximately 400-foot-long segment of Duboce Street, between Stevenson and Mission streets. This lane reduction could potentially cause congestion along this segment during peak periods and result in slower traffic speeds with higher criteria air pollutant emissions than would occur during free-flowing traffic conditions. Lane reductions could also encourage drivers to use other nearby streets, resulting in redistribution of vehicle trips along the roadway network. A quantitative analysis of operational criteria air pollutant impacts from the Sixth Street Improvement project was conducted. As discussed above, that project included elements that would be similar to the streetscape and street network improvements proposed under the Hub Plan. The analysis conducted for the Sixth Street Improvement Project concluded that increases in criteria air pollutants, as a result of redistribution of traffic or additional vehicle delay, would not be significant and would result in increases on the order of: 5 lbs/day for ROG, 9.9 lbs/day for NO_X, and 0.1 lbs/day each for PM_{10} and $PM_{2.5}$. Therefore, because the majority of proposed streetscape and street network improvement projects would be similar to (and none would be more intensive than) the Sixth Street Improvement Project, which found criteria air pollutants to be less than significant, criteria air pollutant emissions from Hub Plan streetscape and street network improvement projects would similarly be ***less than significant***.

Mitigation: None required.

Impact AQ-4. During construction, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status

under an applicable federal, state, or regional ambient air quality standard. (Less than Significant with Mitigation)

Implementation of the Hub Plan, except for the Hub Plan's proposed streetscape and street network improvement projects, which are addressed above under Impact AQ-3, would not, in and of itself, result in construction related-emissions. However, for the purposes of the Hub Plan–level analysis, it is recognized that construction of subsequent development projects would result in criteria air pollutant emissions, the effects of which are analyzed here.

Implementation of the Hub Plan would allow for development of new residential, office, retail, and other uses, at a greater intensity than is currently allowed under existing land use controls. Most development projects in the Hub Plan area would entail demolition and removal of existing structures, excavation, site preparation and construction of new buildings. Emissions generated during construction activities would include exhaust emissions from heavy duty construction equipment, trucks used to haul construction materials to and from sites, and worker vehicle emissions, as well as fugitive dust emissions associated with earth-disturbing activities and other demolition and construction work.

Construction Dust

Activities that generate dust include building and parking lot demolition, excavation, and equipment movement across unpaved construction sites. Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust that adds particulate matter to the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the building code and health code generally referred to as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and avoid orders to stop work by DBI.

The ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one-half acre that are unlikely to result in any visible wind-blown dust.

For project sites over one-half acre, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. DBI will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement.

The site-specific Dust Control Plan requires the project sponsor to submit a map to the Director of Public Health showing all sensitive receptors within 1,000 feet of the site; wet down areas of soil at least three times per day; provide an analysis of wind direction and install upwind and downwind particulate dust monitors; record particulate monitoring results; hire an independent, third-party to conduct inspections and keep a record of those inspections; establish shut-down conditions based on wind, soil migration, etc.; establish a hotline for surrounding community members who may be potentially affected by project-related dust; limit the area subject to construction activities at any one time; install dust curtains and windbreaks on the property lines, as necessary; limit the amount of soil in haul trucks to the size of the truck bed and secure with a tarpaulin; enforce a 15-mile-per-hour speed limit for vehicles entering and exiting construction areas; sweep affected streets with water sweepers at the end of the day; install and use wheel washers to clean truck tires; terminate construction activities when winds exceed 25 miles per hour; apply soil stabilizers to inactive areas; and sweep off adjacent streets to reduce particulate emissions. The project sponsor would be required to designate an individual to monitor compliance with these dust control requirements.

Compliance with the regulations and procedures set forth in the San Francisco Dust Control Ordinance would ensure that potential dust-related construction air quality impacts from subsequent development projects would be reduced to a ***less-than-significant*** level.

Construction Equipment Exhaust

The air district, in its CEQA Air Quality Guidelines (May 2017) developed screening criteria to determine if construction or operational emissions from projects would violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. A project that exceeds the screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds.[52] The screening criteria for land uses expected in the Hub Plan area are shown in **Table 3.D-6.**

TABLE 3.D-6. OPERATIONAL AND CONSTRUCTION CRITERIA AIR POLLUTANT SCREENING FOR EXPECTED HUB PLAN AREA USES

Land Use	Screening Size for Operational Criteria Pollutants (Pollutant of Concern in Parentheses)	Screening Size for Construction Criteria Pollutants (Pollutant of Concern in Parentheses)
Apartment/Condo, low-rise	451 du (ROG)	240 du (ROG)
Apartment/Condo, mid-rise	494 du (ROG)	240 du (ROG)

52 Bay Area Air Quality Management District, CEQA Air Quality Guidelines, updated May 2017. Table 3-1.

TABLE 3.D-6. OPERATIONAL AND CONSTRUCTION CRITERIA AIR POLLUTANT SCREENING FOR EXPECTED HUB PLAN AREA USES

Land Use	Screening Size for Operational Criteria Pollutants (Pollutant of Concern in Parentheses)	Screening Size for Construction Criteria Pollutants (Pollutant of Concern in Parentheses)
Apartment/Condo, high-rise	510 du (ROG)	249 du (ROG)
Retirement community	487 du (ROG)	114 du (ROG)
Congregate care facility	657 du (ROG)	240 du (ROG)
Day-care center	53 ksf (NO_X)	277 ksf (ROG)
Place of worship	439 ksf (NO_X)	277 ksf (ROG)
City park	2613 acres (ROG)	67 acres (PM_{10})
Health club	128 ksf (NO_X)	277 ksf (ROG)
Quality restaurant	47 ksf (NO_X)	277 ksf (ROG)
High turnover restaurant	33 ksf (NO_X)	277 ksf (ROG)
Fast food rest. w/ drive thru	6 ksf (NO_X)	277 ksf (ROG)
Hotel	489 rooms (NO_X)	554 rooms (ROG)
Retail store	83 ksf (NO_X)	277 ksf (ROG)
Supermarket	42 ksf (NO_X)	277 ksf (ROG)
General office building	346 ksf (NO_X)	277 ksf (ROG)
Pharmacy/drugstore	48 ksf (NO_X)	277 ksf (ROG)
Medical office building	117 ksf (NO_X)	277 ksf (ROG)
Warehouse	864 ksf (NO_X)	259 ksf (NO_X)
General light industry	541 ksf (NO_X)	259 ksf (NO_X)

Source: Bay Area Air Quality Management District, CEQA Air Quality Guidelines, updated May 2017, Table 3-1.
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, but not backup generators or industrial sources.

It is likely that some subsequent projects (those located on smaller sites or on sites proposed for moderate upzoning and that do not require substantial excavation of 10,000 cubic yards or more) would be below these screening levels and would, therefore, be presumed to result in criteria air pollutant emissions that do not exceed the air district's significance thresholds. These smaller projects would result in less than significant construction criteria air pollutant impacts. However, other subsequent projects (those located on larger sites or on sites proposed for substantial upzoning or that would require substantial excavation of 10,000 cubic yards or more) have the potential to generate emissions of criteria air pollutants that would exceed the screening criteria established by the air district. These projects would require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds.

Based on quantitative air quality assessments conducted by the department for large projects over the years, it is conceivable that a project involving high-rise construction (of approximately 500 residential units or requiring substantial excavation of 10,000 cubic yards or more) could result in construction-related criteria air pollutant emissions (specifically ROG and NO_X emissions) in excess of air district's significance threshold.[53] Therefore, because it is possible that subsequent development projects, which would be enabled by the Hub Plan, would be large enough to exceed the screening criteria established by the air district and require quantitative analysis, the results of which may exceed the criteria air pollutant significance thresholds, subsequent development projects could result in a ***significant*** impact.

The following mitigation measures would be required for subsequent development projects proposed in the Hub Plan area, with the exception of individual development projects at 30 Van Ness Avenue and 98 Franklin Street, which are analyzed separately under Impact AQ-6.

Mitigation Measures

M-AQ-4a ***Construction Emissions Analysis for Projects Above Screening Levels or That Exceed Criteria Air Pollutant Significance Thresholds.*** Subsequent development projects that do not meet the applicable screening levels in **Table 3.D-6,** p. 3.D-46, of this EIR or that the planning department otherwise determines could exceed one or more significance thresholds for criteria air pollutants shall undergo an analysis of the project's construction emissions. If no significance thresholds are exceeded, no further mitigation is required. If one or more significance thresholds are exceeded, Mitigation Measure M-AQ-4b shall be implemented.

M-AQ-4b ***Construction Emissions Minimization Plan for Projects Above Screening Levels or That Exceed Criteria Air Pollutant Significance Thresholds or as Required in Impact AQ-7.*** If required based on the analysis described in Mitigation Measure M-AQ-4a or as required in Impact AQ-7 the project sponsor shall submit a construction emissions minimization plan to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist.

The construction emissions minimization plan shall detail project compliance with the following requirements:

1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

53 The criteria of 500 units of residential uses is based on CalEEMod version 2013.2.2 year 2016 construction with the default construction equipment and construction phasing that would result in emissions of one or more criteria pollutants from project construction or operation that would approach the significance thresholds.

a) Where access to alternative sources of power is reasonably available, portable diesel engines shall be prohibited;

b) All off-road equipment shall have:

i. Engines that meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board (air board) Tier 2 off-road emission standards (or Tier 3 or Tier 4 off-road emissions standards if NO_X emissions exceed applicable thresholds), *and*

ii. Engines that are retrofitted with an air board Level 3 Verified Diesel Emissions Control Strategy (VDECS),[54] *and*

iii. Engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99).

iv. Any other best available technology offered at the time that future projects are submitted to the planning department for review may be included in the construction emissions minimization plan as substitutions for the above items i through iii.

c) Exceptions:

i. Exceptions to 1(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with 1(b) for onsite power generation.

ii. Exceptions to 1(b)(ii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an air board Level 3 VDECS (1) is technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an air board Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to 1(b)(ii), the project sponsor shall comply with the requirements of 1(c)(iii).

54 Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore VDECS would not be required.

iii. If an exception is granted pursuant to 1(c)(ii), the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedule in **Table M-AQ-4B**:

TABLE M-AQ-4B. OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE*

Compliance Alternative	Engine Emission Standard	Emissions Control
1	Tier 2**	Air Board Level 2 VDECS
2	Tier 2	Air Board Level 1 VDECS

* How to use the table. If the requirements of 1(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met.
** Tier 3 off road emissions standards are required if NO_X emissions exceed applicable thresholds.

iv. Exceptions to 1(b)(iii) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a renewable diesel is not commercially available in the San Francisco Bay Area Air Basin. If an exception is granted pursuant to this section, the project sponsor shall use another type of alternative fuel, such as biodiesel (B20 or higher).

v. Prior to any waiver sought by a project sponsor, the sponsor shall provide documentation demonstrating that by granting the waiver, the project would not exceed any applicable criteria air pollutant threshold.

2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.

3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

4. The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine

model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel use and hours of operation. For the VDECS installed: technology type, serial number, make, model, manufacturer, air board verification number level, and installation date and hour meter reading on installation date. For off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.

5. The construction emissions minimization plan shall be kept onsite and available for review during working hours by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the plan and a way to request a copy of the plan. The project sponsor shall provide copies of the construction emissions minimization plan as requested.

6. *Reporting*. Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 4, above. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.

   Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 4. In addition, for off-road equipment not using renewable diesel, reporting shall indicate the type of alternative fuel being used.

7. *Certification Statement and Onsite Requirements*. Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the construction emissions minimization plan, and (2) all applicable requirements of the construction emissions minimization plan have been incorporated into contract specifications.

It should be noted that for specialty equipment types (e.g., drill rigs, shoring rigs and concrete pumps) it may not be feasible for construction contractors to modify their current, older equipment to accommodate the particulate filters, or for them to provide newer models with these filters pre-installed. Therefore, alternative compliance options are provided for in Mitigation Measure M-AQ-4b.

Significance after Mitigation

Implementation of Mitigation Measures M-AQ-4a and M-AQ-4b would ensure that construction-related emissions would be less than significant. Requiring Tier 3 construction equipment can reduce construction emissions of ROG and NO_X by 14 and 36 percent, respectively while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards. Renewable diesel R100 has the potential to reduce particulate matter emissions by about 30 percent and NO_X emissions by 10 percent.[55] Because construction emissions are assessed based on average daily emissions over the entirety of the construction period, and given the parcel sizes in the Hub Plan area,[56] this level of reduction would be sufficient to ensure that even for larger projects in the Hub Plan area, construction related emissions would be below significance thresholds.

Based on the above, impacts associated with construction equipment exhaust emissions of criteria air pollutants from subsequent development projects under the Hub Plan are considered ***less than significant with mitigation***.

Impact AQ-5. During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Significant Unavoidable with Mitigation)

Subsequent development projects enabled under the Hub Plan would generate vehicle trips and other operational emissions, such as emissions from natural gas combustion, landscape maintenance activities, painting, and the use of consumer products. As discussed above, under Impact AQ-4, the air district established screening criteria to determine if operational emissions from projects would result in a cumulatively considerable net increase in criteria air pollutants. A project that exceeds the operational screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds. As noted above, the results of the quantitative analysis for one or more of the larger subsequent development projects that would be incentivized by the Hub Plan may exceed the criteria air pollutant significance thresholds, resulting in a significant impact.

As discussed under Impact AQ-1, the Hub Plan would further a number of *Clean Air Plan* Transportation Control Measures that would be expected to minimize vehicle trips. Additionally, the planning code contains requirements applicable to individual development projects that would serve to reduce vehicle trips, compared to conditions without such requirements. These include, but are not limited to, limits on permitted parking (section 151.1); pricing non-residential parking to discourage long-term parking (section 155(g)); provision of showers/lockers in new or renovated commercial projects (section 155.3) and bicycle parking in commercial and residential projects (sections 155.4 and 155.5); provision of onsite transportation brokerage services in larger

55 California Environmental Protection Agency, Staff Report: Multimedia Evaluation of Renewable Diesel, May 2015, *http://www.arb.ca.gov/fuels/multimedia/meetings/RenewableDieselStaffReport_Nov2013.pdf*.

56 Parcel size limits the amount of construction equipment and grading area at any one time.

office projects (section 163); provision of car-share parking (section 166); separating the cost of residential parking from the cost of a dwelling unit (section 167); payment of a Transportation Sustainability Fee (section 411A); and provision of onsite child care[57] in office and hotel projects (section 414). The City's TDM program (section 169) seeks to promote sustainable travel modes by requiring new development projects to incorporate design features, incentives, and tools that support transit, ride-sharing, walking, and bicycling for the residents, tenants, employees, and visitors of their projects. The City's *Environment Code* section 421 mandates that larger employers provide transit, transit passes, or financial incentives for transit use (section 421), which also has the potential to reduce vehicle travel. Additionally, the *San Francisco General Plan* and the City *Charter* contain numerous policy directives aimed at reducing auto trips, not the least of which is the City's Transit First Policy (section 16.102 of the *Charter*). However, it is not possible to precisely quantify the reduction in vehicle trips that these code provisions and policies, in combination, would attain. Furthermore, while the above requirements would serve to reduce vehicle trips and their emissions, they do not address other sources of operational criteria air pollutants that could be emitted by subsequent development projects such as criteria air pollutant emissions from consumer products, natural gas combustion, landscape maintenance and painting. Thus, because the Hub Plan would allow for development of projects that exceed the air district's screening criteria and could also exceed the significance thresholds for criteria air pollutants, in the absence of specific development proposals within the Hub Plan area (except the 30 Van Ness Avenue and 98 Franklin Street projects, which are analyzed separately under Impact AQ-6, below), subsequent development projects that would exceed the air district's screening criteria are assumed to have the potential to result in emissions that could exceed applicable significance thresholds.

In light of the above, the air quality impacts of subsequent individual projects are considered significant. Implementation of Mitigation Measures M-AQ-5a, M-AQ-5b, and M-AQ-5c, below, would reduce this impact, but the feasibility or effectiveness of these mitigation measures with respect to reducing criteria air pollutant emissions to levels below the significance thresholds is unknown at this time; therefore, the air quality impacts associated with subsequent development are considered ***significant and unavoidable***.

For projects that would exceed the air district's operational criteria air pollutant thresholds (based on project-specific analysis of each subsequent development project), the following mitigation measures are applicable. It is further noted that the following mitigation measures do not apply to the 30 Van Ness Avenue Project or the 98 Franklin Street Project, which are analyzed separately under Impact AQ-6 (except that as discussed in Impact AQ-9, Mitigation Measure M-AQ-5c applies to the 98 Franklin Street Project).

---

57 This provision may be satisfied by an in-lieu fee, which would not necessarily result in the same trip reduction benefit.

Mitigation Measures

M-AQ-5a ***Educate Residential and Commercial Tenants Concerning Low-VOC Consumer Products.*** Prior to receipt of any building permit and every five years thereafter, the project sponsor shall develop electronic correspondence to be distributed by email or posted onsite annually to tenants of the project that encourages the purchase of consumer products and paints that are better for the environment and generate less volatile organic compound (VOC) emissions. The correspondence shall encourage environmentally preferable purchasing and shall include contact information and links to SF Approved.[58]

M-AQ-5b ***Reduce Operational Emissions for Projects That Exceed Criteria Air Pollutant Thresholds***. Proposed projects that would exceed the criteria air pollutant thresholds shall implement the following additional measures, as applicable and feasible, to reduce operational criteria air pollutant emissions. Such measures may include, but are not limited to, the following:

- For any proposed refrigerated warehouses or large (greater than 20,000 square feet) grocery retailers, provide electrical hook-ups for diesel trucks with Transportation Refrigeration Units at the loading docks.
- Use low- and super-compliant VOC architectural coatings in maintaining buildings. “Low VOC” refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113; however, many manufacturers have reformulated to levels well below these limits. These are referred to as “super-compliant” architectural coatings.
- Other measures that become available and are shown to effectively reduce criteria air pollutant emissions onsite or offsite if emissions reductions are realized within the air basin. Measures to reduce emissions onsite are preferable to offsite emissions reductions.

M-AQ-5c ***Best Available Control Technology for Projects with Diesel Generators and Fire Pumps.*** All diesel generators and fire pumps shall have engines that (1) meet Tier 4 Final or Tier 4 Interim emission standards, or (2) meet Tier 2 emission standards and are equipped with a California Air Resources Board Level 3 Verified Diesel Emissions Control Strategy. All diesel generators and fire pumps shall be fueled with renewable diesel, R99, if commercially available. Additional restrictions limiting the hours per year that generators may be tested may also be required, as determined necessary by the San Francisco Planning Department. For each new diesel backup generator or fire pump permit submitted for a project, including any associated generator pads, engine

58 SF Approved (sfapproved.org) is administrated by the San Francisco Department of Environment, who identifies products and services that are safer and better for the environment (e.g., those that are listed as “Required” or “Suggested”).

and filter specifications shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator or fire pump from the San Francisco Department of Building Inspection. Once operational, all diesel backup generators and Verified Diesel Emissions Control Strategy shall be maintained in good working order for the life of the equipment and any future replacement of the diesel backup generators, fire pumps, and Level 3 Verified Diesel Emissions Control Strategy filters shall be required to be consistent with these emissions specifications. The operator of the facility at which the generator or fire pump is located shall maintain records of the testing schedule for each diesel backup generator and fire pump for the life of that diesel backup generator and fire pump and provide this information for review to the planning department within three months of requesting such information.

Significance after Mitigation

The above measures are required for future subsequent development projects in the Hub Plan area that would exceed the air district screening criteria or, after quantitative analysis, would exceed any of the air district's significance thresholds. However, without specific details on the size and extent of these projects, it is not possible to estimate emissions from subsequent development projects or the effectiveness or feasibility of the above mitigation measures. Additionally, a large portion of a project's operational emissions are generated by vehicle trips and although, as discussed above, the City has numerous requirements already in place to discourage vehicle trips, local government has no authority over vehicle emissions standards, which are established by federal and state law. Consequently, this impact is conservatively identified as ***significant and unavoidable with mitigation***. It should be noted that the identification of this significant impact does not preclude the finding of future less-than-significant impacts for subsequent projects. For example, the quantitative analysis conducted for the 30 Van Ness Avenue and 98 Franklin Street projects (see Impact AQ-6, below) provide an indication of the likely criteria air pollutant impacts of subsequent development projects. The analysis conducted for the 30 Van Ness Avenue and 98 Franklin Street projects found that impacts from operational criteria air pollutant emissions would be less than significant; no mitigation is required for the criteria air pollutant emissions impact from those projects. However, without specific information on the scale and type of development, it cannot be stated with certainty that all subsequent development projects would result in less than significant criteria air pollutant impacts.

Impact AQ-6. During construction or operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status

under an applicable federal, state, or regional ambient air quality standard. (Less than Significant)

30 Van Ness Avenue Project

Construction

Construction of the proposed project at 30 Van Ness Avenue would generate emissions associated with both off-road construction equipment and on-road construction vehicles, including haul trucks, concrete deliveries, and vendor trips. Construction assumptions for the 30 Van Ness Avenue and 98 Franklin Street projects are summarized in the Analysis Assumptions subsection above.

Project-level construction criteria air pollutant emissions were calculated using methodologies consistent with CalEEMod® version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions. Detailed methodology and assumptions associated with emission calculations for the 30 Van Ness Avenue and 98 Franklin Street projects are provided in the Air Quality Technical Report.[59]

Sources of construction emissions that were quantified include off-gassing from architectural coating, off-road equipment exhaust, and on-road vehicle exhaust. Emissions from architectural coating and paving off-gas emissions were based on the square footage of different land uses, as indicated by project sponsors for the 30 Van Ness Avenue Project (and 98 Franklin Street Project, which is discussed below).

Based on the project descriptions for both the 30 Van Ness Avenue and 98 Franklin Street projects, all parking land uses would be enclosed parking structures without any asphalt surface and hence, would not have emissions from paving off-gassing in either project. Emissions from off-road equipment were based on project-specific construction equipment lists and hours of operation, which were provided by project sponsors.

CalEEMod® estimated worker, vendor, and hauling vehicle trip generation rates for construction of the 30 Van Ness Avenue Project (and 98 Franklin Street Project, which is discussed below) are based on the proposed land uses, demolition amounts, and off haul amounts. The estimate of hauling truck trips for material off haul were based on the total off haul amount in cubic yards required for each project. The default trip lengths in CalEEMod® were used for worker, vendor, and haul truck trips. Criteria air pollutant emissions from each construction year for the project were added and then averaged over the number of work days in the construction period to determine average daily construction emissions.

---

59 Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California*, July 10, 2019.

Table 3.D-7 shows the proposed 30 Van Ness Avenue Project's average daily emissions during construction. Pursuant to air district guidance, only exhaust-related PM_{10} and $PM_{2.5}$ emissions are presented with the project's construction emissions because the air district recommends that fugitive PM_{10} and $PM_{2.5}$ emissions be addressed through implementation of best management practices.

TABLE 3.D-7. 30 VAN NESS AVENUE PROJECT CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS[1]

	Criteria Air Pollutant Emissions[3]			
Phase[2]	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Off-road emissions	775	6,937	356	336
On-road emissions	1,513	19,150	1,319	630
Paving Off-Gas Emissions[4,5]	0	0	0	0
Architectural Coating[6]	11,216	0	0	0
Total Emissions	13,504	26,088	1,675	966
Average Daily Emissions (lb/day)	12	23	1.5	0.84
Significance Threshold (lb/day)	54	54	82	54
Exceed Threshold?	No	No	No	No

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. The modeled scenario reported here was estimated using default (i.e., fleet-average) emission factors for off-road equipment, without any mitigation measures.
2. The length of construction refers to the approximate number of construction work days throughout project construction, without double-counting overlapping phases.
3. Criteria air pollutant emissions were calculated using methodology consistent with CalEEMod® and construction information supplied by the project sponsor.
4. Paving and architectural coating emissions were calculated using methodology consistent with CalEEMod®.
5. Because the proposed parking structure is below grade, it would not require asphalt paving.

Projects that would result in emissions of criteria air pollutants less than the significance thresholds identified in **Table 3.D-7** would not violate an air quality standard or contribute substantially to an air quality violation.

As shown in **Table 3.D-7**, construction-generated emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust for the 30 Van Ness Avenue Project would not exceed the applicable mass emission thresholds of significance. Therefore, construction period criteria air pollutant impacts from the proposed project at 30 Van Ness Avenue would be less than significant.

The air district recommends that all projects, regardless of the level of average daily emissions, implement best management practices to reduce construction-related fugitive dust emissions. The Construction Dust Control Ordinance requires that all site preparation work, demolition, or other construction activities in San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specific dust control measures whether or not the activity requires a permit from DBI. For projects over one half-acre, such as the proposed project at 30 Van Ness Avenue, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. The Department of Building Inspection will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the director waives the requirement. Additional requirements of the Dust Control Ordinance are detailed above in Impact AQ-4.

The project sponsor would be required to designate an individual to monitor compliance with the dust control requirements. San Francisco ordinance 175-91 restricts the use of potable water for soil compaction and dust control activities undertaken in conjunction with any construction or demolition project occurring within the boundaries of San Francisco, unless permission is obtained from the San Francisco Public Utilities Commission. Non-potable water must be used for soil compaction and dust control activities during project construction and demolition. The San Francisco Public Utilities Commission operates a recycled water truck-fill station at the Southeast Water Pollution Control Plant that provides recycled water for these activities at no charge. Because the proposed project would be required to comply with the regulations and procedures set forth by the Dust Control Ordinance, potential dust-related air quality impacts from the proposed project at 30 Van Ness Avenue would be reduced to a less-than-significant level.

In summary, construction of the proposed project at 30 Van Ness Avenue would not violate or contribute substantially to an existing or projected air quality violation. Therefore, construction-related criteria air pollutant impacts from the proposed project would be ***less than significant***, and no mitigation is necessary.

Operations

Operation of the proposed project at 30 Van Ness Avenue would have the potential to create air quality impacts, which would be associated primarily with mobile, area, stationary, and energy sources. Motor vehicle traffic would include daily resident-access, visitor, delivery truck, and employee trips. Area sources would include landscaping equipment, architectural coatings and the associated off-gassing during reapplication, and use of consumer products (e.g., solvents, cleaning supplies, cosmetics, toiletries). Stationary sources include two proposed emergency diesel generators. Energy sources include natural gas combustion for space and water heating. Each of these sources was taken into account in calculating the proposed project's long-term operational emissions. Operational emissions were quantified for build-out year 2024 and are discussed below.

Operational assumptions for the 30 Van Ness Avenue Project are summarized in the Analysis Assumptions subsection above. Detailed methodology and assumptions associated with emission estimates are provided in the Air Quality Technical Report prepared in support of this EIR. Project-level operational criteria air pollutant emissions were calculated using methodology consistent with CalEEMod version 2016.3.2. In order to determine net new criteria air pollutant emissions that would result from implementation of the project, it is necessary to also quantify existing emissions occurring on the project site. The proposed project's 180,330 square feet (sf) of existing office uses would be replaced with up to approximately 826,000 sf of new uses, including up to 21,000 sf of retail, up to 350,000 sf of general office, and up to 520,000 sf of residential uses. The emissions from the existing land uses were also quantified in CalEEMod and subtracted from the proposed project emissions to determine net new criteria air pollutant emissions following project completion.

The average daily and total annual increases in emissions associated with operation of the proposed project at project build-out is shown in **Table 3.D-8** for ROG (precursor of ozone), NO_X (precursor of ozone), PM_{10}, and $PM_{2.5}$ with results showing the contribution to each pollutant by emissions source.

As shown in **Table 3.D-8**, below, the average daily net emissions at full buildout (after taking into account the effects of removing the existing office uses on the project site) would be 20 lbs/day for ROG, 8.2 lbs/day for NOx, 20 lbs/day for PM_{10}, and 5.5 for $PM_{2.5}$ lbs/day, which are below the respective air district significance thresholds of 54 lbs/day for ROG, NOx, and $PM_{2.5}$, and 82 lbs/day for PM_{10}. The maximum net annual operational emissions at full buildout (after taking into account the effects of removing the existing office uses on the project site) would be 3.7 tons/year for ROG, 1.5 tons/year for NOx, 3.6 tons/year for PM_{10}, and 1.0 tons/year for $PM_{2.5}$, which are also below the respective air district significance thresholds of 10 tons/year for ROG, NOx, and $PM_{2.5}$, and 15 tons/year for PM_{10}.

TABLE 3.D-8. 30 VAN NESS AVENUE PROJECT OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

Modeled Year	Emissions Source Category	Average Daily Operational Emissions[1] [lb/day]			
		ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Existing 2018 Baseline[2]	Area[5,6]	4.4	1.1E-04	5.5E-05	5.5E-05
	Energy[7]	0.10	0.94	0.071	0.071
	Mobile[8]	7.2	13	10	3.0
	Generator[9]	--	--	--	--
	Total	**12**	**14**	**10**	**3.0**
2024 Full Project Buildout[3]	Area[5,6]	23	0.29	0.14	0.14
	Energy[7]	0.36	3.2	0.25	0.25
	Mobile[8]	9.0	17	30	8.1
	Generator[9]	0.0011	2.2	0.073	0.073
	Total	**32**	**22**	**30**	**8.6**
Net Project Emissions[4]	Area[5,6]	18	0.29	0.14	0.14
	Energy[7]	0.26	2.3	0.18	0.18
	Mobile[8]	1.7	3.4	19	5.2
	Generator[9]	0.0011	2.2	0.073	0.073
	Total	**20**	**8.2**	**20**	**5.5**

TABLE 3.D-8. 30 VAN NESS AVENUE PROJECT OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

Modeled Year	Emissions Source Category	Average Daily Operational Emissions[1] [lb/day]			
		ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Significance Threshold (lb/day)		54	54	82	54
Exceed Threshold?		No	No	No	No
		Annual Operational Emissions [ton/year][10]			
		ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Existing 2018 Baseline[2]		2.1	2.6	1.9	0.56
2024 Full Project Buildout[3]		5.8	4.1	5.5	1.6
Net Project Emissions[4]		3.7	1.5	3.6	1.0
Significance Threshold (lb/day)		10	10	15	10
Exceed Threshold?		No	No	No	No

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Operational emissions from area, energy, and mobile sources were estimated with CalEEMod® version 2016.3.2.

2. Operational emissions from the baseline scenario (existing conditions) were estimated using CalEEMod® default emission factors for 2018.

3. Full project operation was assumed to occur immediately following construction. The emissions were assumed to occur over a full year of operation.

4. The net project emissions were estimated by subtracting the baseline existing emissions from the total project buildout emissions.

5. For consumer products, ROG emissions were calculated based on the average emission factor for the City of San Francisco. San Francisco's ROG emissions from consumer products is projected to be 5.67 tons per day in 2020 (Ref: https://www.arb.ca.gov/app/emsinv/emssumcat.php). San Francisco's building square footage was 539,022,396 square feet based on a survey in 2007 (Ref: DataSF Land Use shapefiles). Therefore, the emission factor was calculated as follows: (5.67 tons/day * 2000 lbs/ton)/539,022,396 sq. ft. = 2.10 x 10-5 lbs/(sq. ft.-day).

6. Per air district Rule 6-3-306, no new building construction can include wood-burning devices. Based on communication with project sponsor, the project would not include any natural gas hearths.

7. Baseline energy consumption was assumed to adhere to Title 24 2016.

8. CalEEMod® default vehicle trip generation rate and length were used in generating operational mobile emissions. Emission factors were updated to reflect emissions factors from EMFAC2017 for 2024 (build out year).

9. The two 1,500 kW generators were modeled using default engine emission factors from CalEEMod (statewide average) and assuming 50 hours of year of non-emergency testing. Below is the calculation methodology:

E = EF * HP * Hr

Where:

E = generator engine emissions HP = generator horsepower

EF = compression-ignition engine emission factor Hr = generator hours

Engine emission factors for NOx, PM_{10}, and $PM_{2.5}$ (assumed all engines are diesel fueled, and that all PM_{10} is diesel particulate matter) based on CalEEMod® version 2016.3.2. default emission factors for >750-hp engines from Table 12.1. in Appendix D of the User's Guide. Engines are assumed to be at maximum load during testing. Average daily generator emissions are annualized by dividing fifty hours of annual use by 365 days per year.

10. Annual operational emissions are estimated by multiplying average daily emissions by 365 days per year.

Because the 30 Van Ness Avenue Project's emissions would be below the operational significance criteria, the project would have a ***less-than-significant impact*** on regional emissions of ozone precursors (ROG and NOx), PM_{10}, and $PM_{2.5}$; no mitigation measure is required.

98 Franklin Street Project

Construction

Construction of the proposed project at 98 Franklin Street would generate emissions associated with both off-road construction equipment and on-road construction vehicles, including haul trucks, concrete deliveries, and vendor trips. Construction emissions were quantified using methodologies consistent with CalEEMod version 2016.3.2. Construction assumptions for the 98 Franklin Street Project are summarized in the Analysis Assumptions subsection above and detailed methodology and assumptions are provided in the Air Quality Technical Report prepared in support of this EIR.

Table 3.D-9 shows the proposed project's average daily emissions during construction. As noted for the 30 Van Ness Avenue analysis above, pursuant to air district guidance, only exhaust-related PM_{10} and $PM_{2.5}$ emissions are presented with the project's construction emissions because the air district recommends that fugitive PM_{10} and $PM_{2.5}$ emissions be addressed through implementation of best management practices. Projects that would result in emissions of criteria air pollutants less than the significance thresholds identified in **Table 3.D-9** would not result in a cumulatively considerable net increase in criteria air pollutant emissions.

As shown in **Table 3.D-9**, construction-generated emissions from the 98 Franklin Street Project would be 12 lbs/day for ROG, 8.6 lbs/day for NO_X, 0.67 lbs/day for PM_{10}, and 0.39 lbs/day for $PM_{2.5}$, which are below the respective significance thresholds of 54 lbs/day for ROG, NO_X, and $PM_{2.5}$, and 82 lbs/day for PM_{10}. Therefore, construction period criteria air pollutant impacts from the proposed project at 98 Franklin Street would be less than significant.

TABLE 3.D-9. 98 FRANKLIN STREET PROJECT CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS[1]

	Criteria Air Pollutant Emissions[2]			
Phase	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Off-road emissions	264	2,387	100	95
On-road emissions	345	2,488	280	127
Paving Off-Gas Emissions[3]	0	0	0	0
Architectural Coating[4]	6,299	0	0	0
Total Emissions	6,907	4,874	381	222
Length of Construction (construction days)[5]	569			
Average Daily Emissions (lb/day)	12	8.6	0.67	0.39
Significance Threshold (lb/day)	54	54	82	54
Exceed Threshold?	No	No	No	No

TABLE 3.D-9. 98 FRANKLIN STREET PROJECT CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS[1]

Source: Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California*, July 10, 2019.

Notes:

1. The modeled scenario reported here was estimated using default (i.e., fleet-average) emission factors for off-road equipment, without any mitigation measures.
2. Criteria air pollutant emissions were calculated using methodology consistent with CalEEMod® and construction information supplied by the project sponsor.
3. Paving and architectural coating emissions were calculated using methodology consistent with CalEEMod®.
4. Because the proposed parking structures are below grade, they would not require asphalt paving.
5. The length of construction refers to the approximate number of construction work days throughout the project construction, without double-counting overlapping phases.

The air district recommends that all projects, regardless of the level of average daily emissions, implement best management practices to reduce construction-related fugitive dust emissions. The 98 Franklin Street Project would be required to comply with the City's Construction Dust Control Ordinance, as described above on page 3.D-24 and in more detail on page 3.D-59. All of the requirements noted in that discussion for the 30 Van Ness Avenue Project would also be required for the 98 Franklin Street Project.

In summary, construction of the proposed project at 98 Franklin Street would not violate or contribute substantially to an existing or projected air quality violation. Therefore, construction-related criteria air pollutant impacts from the proposed project would be ***less than significant***, and no mitigation is necessary.

Operations

Operation of the proposed project at 98 Franklin Street would have the potential to create air quality impacts, which would be associated primarily with mobile, area, stationary, and energy sources. Motor vehicle traffic would include daily resident-access, visitor, delivery truck, and employee and student trips. Area sources would include landscaping equipment, architectural coatings and the associated off-gassing during reapplication, and use of consumer products (e.g., solvents, cleaning supplies, cosmetics, toiletries). Stationary sources include a proposed emergency diesel generator. Energy sources include natural gas combustion for space and water heating. Each of these sources was taken into account in calculating the proposed project's long-term operational emissions. Operational emissions were quantified for build-out year 2023 and are discussed below.

Project-level operational criteria air pollutant emissions were calculated using methodology consistent with CalEEMod version 2016.3.2. Operational assumptions for the 98 Franklin Street Project are summarized in the Analysis Assumptions subsection above. Detailed methodology and assumptions associated with emission estimates are provided in the Air Quality Technical

Report prepared in support of this EIR.[60] Since the 98 Franklin Street project site currently contains parking lot uses, no emissions reductions from these existing land uses were accounted for in determining net new emissions from the proposed project.

The average daily and total annual increases in emissions associated with operation of the proposed 98 Franklin Street Project at project build-out is shown in **Table 3.D-10** for ROG (precursor of ozone), NO_X (precursor of ozone), PM_{10}, and $PM_{2.5}$ with results showing the contribution to each pollutant by emissions source.

As shown in **Table 3.D-10**, the average daily net emissions at full buildout would be 15 lbs/day for ROG, 10 lbs/day for NO_X, 11 lbs/day for PM_{10}, and 3 lbs/day for $PM_{2.5}$, which are below the respective significance thresholds of 54 lbs/day for ROG, NO_X, and $PM_{2.5}$, and 82 lbs/day for PM_{10}. The maximum net annual operational emissions at full buildout would be 2.8 tons/year for ROG, 1.8 tons/year for NO_X, 2.0 tons/year for PM_{10}, and 0.57 tons/year for $PM_{2.5}$, which are also below the respective significance thresholds of 10 tons/year for ROG, NO_X, and $PM_{2.5}$, and 15 tons/year for PM_{10}.

Because the 98 Franklin Street Project's emissions would be below the operational significance criteria, the 98 Franklin Street Project would have a ***less-than-significant impact*** on regional emissions of ozone precursors (ROG and NO_X), PM_{10}, and $PM_{2.5}$.

TABLE 3.D-10. 98 FRANKLIN STREET PROJECT OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

Modeled Year	**Emissions Source Category**	**Average Daily Operational Emissions[1] [lb/day]**			
		ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
2023 Full Project Buildout[2]	Area[3,4]	12	0.16	0.078	0.078
	Energy[5]	0.13	1.1	0.089	0.089
	Mobile[6]	3.3	6.1	11	2.9
	Generator[7]	0.0014	2.8	0.091	0.091
	Total	**15**	**10**	**11**	**3**
Significance Threshold (lb/day)		54	54	82	54
Exceed Threshold?		No	No	No	No
		Maximum Annual Operational Emissions [ton/year][10]			
		ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
2024 Full Project Buildout[2]		2.8	1.8	2.0	0.57
Significance Threshold (lb/day)		10	10	15	10
Exceed Threshold?		No	No	No	No

60 Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California*, July 10, 2019.

TABLE 3.D-10. 98 FRANKLIN STREET PROJECT OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.
Notes:
1. Operational emissions from area, energy, and mobile sources were estimated with CalEEMod® version 2016.3.2.
2. Full project operation was assumed to occur immediately following construction. The emissions were assumed to occur over a full year of operation.
3. For consumer products, ROG emissions were calculated based on the average emission factor for the City of San Francisco. San Francisco's ROG emissions from consumer products is projected to be 5.67 tons per day in 2020 (Ref: https://www.arb.ca.gov/app/emsinv/emssumcat.php). San Francisco's building square footage was 539,022,396 square feet based on a survey in 2007 (Ref: DataSF Land Use shapefiles). Therefore, the emission factor was calculated as follows:
(5.67 tons/day * 2000 lbs/ton)/539,022,396 sq. ft. = 2.10 x 10-5 lbs/(sq. ft.-day).
4. Per air district Rule 6-3-306, no new building construction can include wood-burning devices. Based on communication with project sponsor, the project would not include any natural gas hearths.
5. Energy consumption was assumed to adhere to Title 24 2016.
6. CalEEMod® default vehicle trip generation rate and length were used in generating operational mobile emissions. Emission factors were updated to reflect emissions factors from EMFAC2017 for year 2024 (build out year).
7. For the unmitigated scenario, which is presented above, one 1,500 kW generator was assumed using default engine emission factors from CalEEMod (statewide average) and 50 hours of year of non-emergency testing. Below is the calculation methodology:

E = EF * HP * Hr

Where:

E = generator engine emissions
EF = compression-ignition engine emission factor
HP = generator horsepower
Hr = generator hours

Engine emission factors for NOx, PM_{10}, and $PM_{2.5}$ (assumed all engines are diesel fueled, and that all PM_{10} is diesel particulate matter) are based on CalEEMod® version 2016.3.2. default emission factors for >750-hp engines from Table 12.1. in Appendix D of the User's Guide. Engines are assumed to be at maximum load during testing. Average daily generator emissions are annualized by dividing 50 hours of annual use by 365 days per year.
9. Annual operational emissions are estimated by multiplying average daily emissions by 365 days per year.

COMMUNITY RISK AND HAZARD IMPACTS

Impact AQ-7. The Hub Plan would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. (Significant and Unavoidable with Mitigation)

The Hub Plan and Subsequent Development Projects

At present, and as stated in the Environmental Setting, above, the vast majority of the Hub Plan area is located within the City's identified APEZ, an area where air pollutant levels exceed health protective standards. In addition, the Hub Plan would increase development potential within the Hub Plan area. Subsequent development enabled by the Hub Plan would generate vehicle traffic and require the installation of stationary sources, both of which would emit diesel particulate matter and other TACs. The streetscape and street network improvements would also affect the distribution of some vehicle trips and, therefore, the location of traffic emissions. Therefore, the Hub Plan could affect the geographic extent and severity of the APEZ.

A health risk assessment was conducted to estimate the incremental change in cancer risks and localized $PM_{2.5}$ concentrations that would result from the proposed Hub Plan, including an evaluation of operational impacts from the increase in traffic in the Hub Plan area as well as from potential generators for the sites that would be rezoned to allow for 75 feet or taller buildings, as these buildings typically require an emergency backup generator to meet life safety requirements under the building and fire codes. The Hub Plan currently proposes re-zoning of 11 individual sites including the sites for the 30 Van Ness Avenue Project and 98 Franklin Street Project to heights above 75 feet. The air quality analysis for the Hub Plan and proposed individual development projects at 30 Van Ness Avenue and 98 Franklin Street, discussed below, includes construction and operational impacts associated with each project separately. However, because the Hub Plan would rezone the allowable heights for the 30 Van Ness Avenue and 98 Franklin Street project sites, results of the project-level analyses for the 30 Van Ness Avenue and 98 Franklin Street projects (construction and operations) are also included in the analysis of the Hub Plan's impact.

In general, for the sources of emissions that were modeled, the assumptions and scenarios used in the modeling were those that would have resulted in maximum impacts from the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Street.[61] Emissions from these sources were quantified to determine whether Hub Plan–level emissions would exceed the applicable significance thresholds ($PM_{2.5}$ concentrations of 0.2 $\mu g/m^3$ and/or cancer risk of 7.0 per 1 million persons exposed).

Construction emission from subsequent development projects are not included in the health risk analysis because a construction health risk assessment is based on project-specific construction

61 In order to estimate the air quality impacts of traffic emissions resulting from the Hub Plan, scenarios that result in the maximum estimated impacts of the Hub Plan in both baseline year (2020) and cumulative year (2040) were chosen for the health risk modeling, as discussed in section 2.1.1.1 of the air quality technical report. In the Baseline (2020) scenarios, traffic impacts from the Hub Plan (Hub Plan 2020 Traffic) were estimated as the difference between the "Baseline 2020 Plus Hub Plan and Civic Center Land Use"(which includes all approved, funded, and constructed transportation projects as well as traffic from population and growth projections for 2020, assuming implementation of the Hub Plan and Civic Center Public Realm Plan land use changes, not including streetscape and street network improvements) and "Baseline 2020 (No Project)" traffic scenarios. Streetscape and street network improvements proposed by the Hub Plan are not included in this analysis because initial modeling results indicated that, with inclusion of the streetscape and street network improvements proposed under the Hub Plan, overall traffic levels would be lower resulting in in less emissions and lower overall health risks. Therefore, by basing the analysis on the scenarios discussed above, the analysis is a worst-case comparison of traffic-related risks and $PM_{2.5}$ concentrations as a result of the Hub Plan. Similarly, the traffic analysis of the Hub Plan's impact in the cumulative year (2040) is based on the difference between the "Cumulative 2040 Plus Hub Plan and Civic Center Land Use" and the "Cumulative 2040 No Project" traffic scenarios. The difference between these two scenarios does not account for Hub streetscape and street network changes, likewise yielding a worst-case assessment of emissions and health risks that could result from implementation of the Hub Plan. For this reason, the emissions and health impacts of the Hub Plan are likely to be lower than presented here.

information, which is unavailable at this time. However, it is expected that emissions from subsequent development projects, and consequent health risks, would be similar to those discussed for 30 Van Ness Avenue and 98 Franklin Street projects, below. Moreover, the analysis presented in this impact statement does not include construction emissions from streetscape and street network improvement projects because health risk impacts from streetscape and street network improvements are addressed separately under Impact AQ-8.

Emissions from all of the above sources were quantified (Hub Plan–level traffic, Hub Plan–level generator, and project-level construction emissions from the 30 Van Ness Avenue and 98 Franklin Street projects). Emission factors associated with traffic-related emissions were estimated using the mobile source emission inventory EMFAC2017. For each site rezoned to a height of 75 feet or greater, the analysis assumes one 2,000 kW generator is needed for life safety requirements. The generators are assumed to operate for 50 hours per year for required testing, consistent with the testing limits in air district permits. Project specific information on the number and size of generators were used for the 30 Van Ness Avenue and 98 Franklin Street project analyses.

Emissions from each of these sources were then input into the AERMOD dispersion model to determine concentrations of diesel particulate matter and other TACs for each receptor point. Receptors were modeled on a 20- by 20-meter receptor grid, consistent with the citywide health risk modeling conducted for the APEZ. AERMOD requires a number of modeling inputs including source parameters, meteorological parameters, topography information and receptor parameters. Each of these parameters are detailed in the Air Quality Technical Report prepared for this EIR.

After conducting the dispersion modeling, the cancer risk from diesel particulate matter and other toxic air contaminants were estimated for each receptor point using Office of Environmental Health Hazard Assessment (OEHHA) health risk methodology.

As part of this health risk assessment, an update of the APEZ modeling was conducted to determine the current existing health risk conditions. The updated model is based on the latest emissions sources information available for permitted stationary sources, maritime, and rail source emissions, as well as updated vehicle traffic emissions. The updated health risk analysis also incorporates the latest OEHHA methodology. The methodology employed in the dispersion modeling, as well as the scenarios that were modeled, are further documented in the Air Quality Technical Report prepared for this EIR.[62]

Health Risk Model Results

The Hub Plan and subsequent development projects, including projects at 30 Van Ness Avenue and 98 Franklin Street, would emit TACs and $PM_{2.5}$ as a result of vehicle trips, stationary sources, and construction activities. The Baseline (2020) + Hub Plan scenario evaluated the impact from

62 Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California*, July 10, 2019.

the Hub Plan in conjunction with the anticipated background conditions (which were evaluated in the Baseline [2020] No Hub Plan Scenario).

The maximally exposed individual sensitive receptor (MEISR) was determined by identifying the sensitive receptor with the maximum impact from the Hub Plan's emissions sources. The health risk from the Hub Plan at all other sensitive receptor locations would be less than that reported for the MEISR. Additionally, the impacts from the Hub Plan at each receptor were added to the background Baseline (2020) No Hub Plan Scenario impacts in order to determine the total health impact at each receptor.

Results of the modeling were used to determine whether the proposed Hub Plan as well as individual projects at 30 Van Ness Avenue and 98 Franklin Street would exceed thresholds for total excess lifetime cancer risk and/or $PM_{2.5}$ concentrations at the Hub Plan MEISR. As shown in **Table 3.D-11** and **Table 3.D-12**, p. 3.D-69, cancer risk (under the unmitigated scenario[63]) from all Hub Plan sources would increase by as much as 225 in 1 million and the $PM_{2.5}$ concentration would increase by up to 0.67 $\mu g/m^3$ at individual receptor points. These levels would exceed the significance thresholds an increased cancer risk of 7.0 per 1 million people exposed and $PM_{2.5}$ concentrations of 0.2 $\mu g/m^3$ identified in **Table 3.D-11** and **Table 3.D-12**, p. 3.D-69. Therefore, implementation of the Hub Plan and subsequent projects (inclusive of individual development projects at 30 Van Ness Avenue and 98 Franklin Street) would result in ***significant impacts*** related to exposure of sensitive receptors to substantial levels of toxic air contaminants. Again, the modeling in **Table 3.D-11** and **Table 3.D-12**, p. 3.D-69, does not account for emissions from implementation of the streetscape and street network improvements, which are analyzed separately under Impact AQ-8, below, and they do not account for emissions from construction of subsequent development projects (other than 30 Van Ness Avenue and 98 Franklin Street projects) as those emissions are based on detailed project-specific information which is not known at this time. Although construction emissions, and consequent health risks, from subsequent development projects are unknown, they would likely be similar to that modeled for the 30 Van Ness Avenue and 98 Franklin Street projects.

With respect to mobile-source emissions, the City's requirement for subsequent projects to prepare TDM plans would reduce vehicle emissions by reducing the number of vehicle trips. For subsequent projects within the Hub Plan area, TDM plans would require a project TDM coordinator to be identified; transportation and trip planning information to be provided to building occupants; and components that encourage bicycling, car sharing, and transit; reduce vehicular parking; allow City access for data collection; and monitor the TDM program. In addition, the planning code contains requirements applicable to individual development projects that would serve to reduce

63 The unmitigated scenario evaluated health risks associated with operation of Hub Plan–level generators without any controls on construction equipment for the 30 Van Ness Avenue and 98 Franklin Street projects or emergency diesel generators. Diesel-powered construction equipment were assumed to operate with fleet-average emission factors consistent with default assumptions in the California Emissions Estimator Model version 2016.3.2 (CalEEMod®).

vehicle trips, compared to conditions without such requirements. Section 421 of the City's environment code mandates that larger employers provide transit, transit passes, or financial incentives for transit use (section 421), which also has the potential to reduce vehicle travel. Additionally, the San Francisco General Plan and the City Charter contain numerous policy directives aimed at reducing auto trips, not the least of which is the City's Transit First Policy (section 16.102 of the charter). However, the efficacy of these requirements and mitigation measures to reduce tailpipe emissions cannot be quantified because the degree to which these measures would reduce the number of vehicle trips, as well as the resulting tailpipe emissions, are uncertain. Furthermore, vehicle emissions are regulated at the state and federal level. Nevertheless, Mitigation Measure M-AQ-7a has been included and requires the City to explore additional feasible measures to improve air quality within the Hub Plan area.

TABLE 3.D-11. BASELINE (2020) + HUB PLAN CANCER RISK AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

		Cancer Risk (per 1 million persons exposed)	
Emissions Source Category		**Unmitigated**	**Mitigated**
Hub Plan Cancer Risk Contributions			
Construction of Individual Development Projects under Hub Plan	30 Van Ness Avenue Project	12	0.26
	98 Franklin Street Project	21	1.7
Generators[1]		182	24
Hub Plan 2020 Traffic		11	11
Total Project or Hub Plan Contribution		225	37
Significance threshold for Hub Plan cancer risk contribution within an APEZ		7	7
Significant?		Yes	Yes
Baseline (2020) No Hub Plan Cancer Risk Contributions			
Baseline (2020) No Hub Plan Traffic		226	226
Rail Sources		0.85	0.85
Maritime Sources		35	35
Existing Stationary Sources		4.7	4.7
Total Cancer Risk at MEISR		492	303

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.

TABLE 3.D-12. BASELINE (2020) + HUB PLAN $PM_{2.5}$ CONCENTRATION AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

Emissions Source Category		$PM_{2.5}$ Concentration (μg/m³) Unmitigated	Mitigated
Hub Plan Contributions			
Construction of Individual Development Projects under Hub Plan	30 Van Ness Avenue Project	0.59	0.0012
	98 Franklin Street Project	0.010	0.0094
Generators[1]		0.0077	0.032
Hub Plan 2020 Traffic		0.055	0.076
Total Project or Hub Plan Contribution		**0.67**	0.12
Significance threshold for Hub Plan $PM_{2.5}$ contribution within an APEZ		0.2 μg/m³	0.2 μg/m³
Significant?		Yes	Yes
Baseline (2020) No Hub Plan Cancer Risk Contributions			
Baseline (2020) No Hub Plan Traffic		1.6	1.5
Rail Sources		0.0015	0.0016
Maritime Sources		0.048	0.046
Existing Stationary Sources		0.049	0.044
Background Concentration[3]		7.8	7.8
Total $PM_{2.5}$ Concentration at MEISR		10.2	9.5

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.

2. The location of the MEISR changes between the unmitigated and mitigated scenario. This means that after mitigation is applied the location where the Hub Plan has the greatest impact changes and the contribution of existing and Hub Plan–level $PM_{2.5}$ concentrations also change. For example, the $PM_{2.5}$ concentration from generators for the mitigated scenario is higher than the unmitigated scenario not because the impact is greater, but because once mitigation is applied, the location of the MEISR changes and the contribution of $PM_{2.5}$ concentrations from the generator is greater at this location. Additionally, the contribution from baseline sources also changes as the location of the MEISR changes between the mitigated and unmitigated analyses.

3. The background $PM_{2.5}$ concentration is the average annual monitored $PM_{2.5}$ concentration from the air district's 16th and Arkansas Street monitoring station.

Hub Plan–Generated Mobile Source Emissions

Stationary and Non-Permitted Sources

New stationary sources in the Hub Plan area would result in potential health risks to existing and new sensitive receptors, which would be expected to consist mostly of persons living in residential projects within the Hub Plan area. Among these sources would be diesel-powered emergency generators, which are required to be installed in taller buildings (as noted above, generally those with occupiable floors above 75 feet in height, in accordance with section 2702.2.15 of the San Francisco Building Code [2013], adopted from the California Building Code without modification). Operation of these generators would expose nearby sensitive receptors to elevated concentrations of TACs, including diesel particulate matter and $PM_{2.5}$.

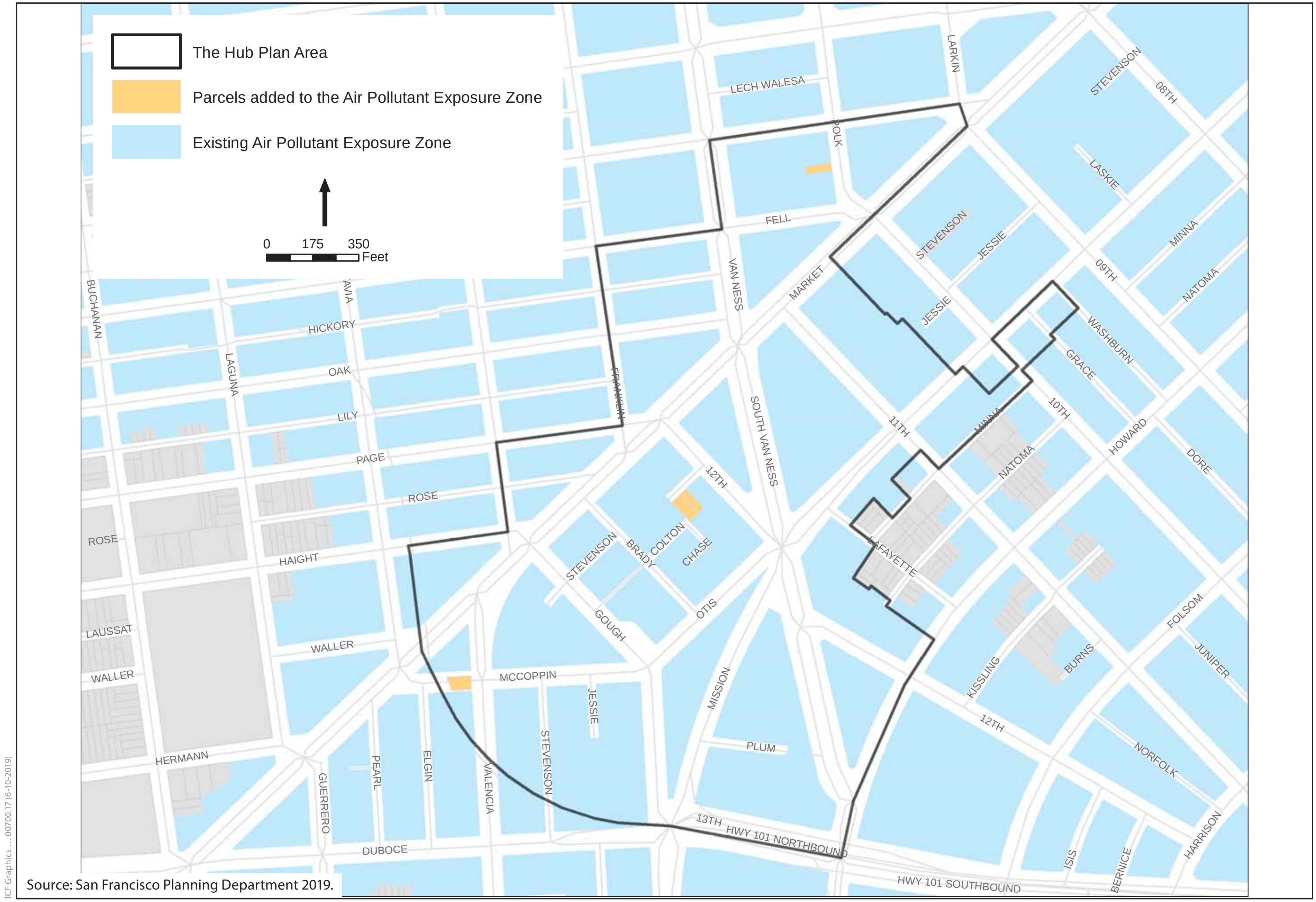
Most new stationary sources, including backup generators, would require a permit from the air district, and air district permit requirements would generally reduce emissions from such sources. For example, all stationary engines greater than 50 horsepower require an air district permit and diesel engines must comply with a state-mandated TAC control measure for such engines, which is administered by the air district. In general, the air district will not issue a permit for a stationary diesel engine that would result in a cancer risk greater than 10 in 1 million for the maximally exposed receptor. However, within the APEZ, these additional emissions of TACs would be a significant impact, given that these areas already have poorer air quality and existing sensitive receptors have an increased health vulnerability from air pollution. Mitigation Measures M-AQ-5c, discussed above under Impact AQ-5, and Mitigation Measures M-AQ-7b and M-AQ-7c, discussed below, would be required and would reduce diesel particulate matter and other TAC emissions and sensitive receptor exposure to those emissions. Generators with Tier 4 engines emit 75 to 85 percent fewer DPM and $PM_{2.5}$ emissions than Tier 2 engines, while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards. Furthermore, renewable diesel R100 has the potential to reduce particulate matter emissions by about 30 percent and NO_X emissions by 10 percent.[64]

Subsequent Development Projects Construction Emissions

Given the lack of project-specific information regarding construction phasing, equipment, and number of employees, construction emissions from subsequent projects were not modeled as part of this analysis; however, construction of subsequent projects could result in emissions similar to those discussed under Impact AQ-9 for the 30 Van Ness Avenue and 98 Franklin Street projects, which represent the types of projects that would be enabled by the Hub Plan. As such, these impacts could be significant. Implementation of Mitigation Measure M-AQ-4b, Requirement for Construction Emissions Minimization Plan for Projects That Would Not Meet Screening Levels or Would Exceed Criteria Air Pollutant Significance Thresholds or Required in Impact AQ-7, which would be triggered through Mitigation Measure M-AQ-7d, Implementation of Mitigation Measure M-AQ-4b to Future Construction within the Existing or Future Air Pollution Exposure Zone, discussed below, would ensure that construction of subsequent projects within the APEZ or within newly added parcels that meet the APEZ criteria, as shown in **Figure 3.D-2,** would be reduced to less than significant.

---

64 California Environmental Protection Agency, Staff Report: Multimedia Evaluation of Renewable Diesel, May 2015. Available at *http://www.arb.ca.gov/fuels/multimedia/meetings/RenewableDieselStaffReport_Nov2013.pdf*.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.D-2
Air Exposure Pollutant Zone Under Baseline (2020) and Plan Scenarios

Exposure of Sensitive Receptors

As noted in the Environmental Setting, the City's APEZ is established based on emissions from all known sources of TACs and $PM_{2.5}$, including both mobile and stationary sources and, as discussed in the Regulatory Framework, *San Francisco Health Code* article 38 protects new sensitive land uses from sources of air pollution by requiring that within the APEZ, these uses incorporate enhanced ventilation systems, including MERV 13 filtration, into building design and construction. MERV 13 air filtration is capable of removing 80 percent of particulate matter, thereby reducing an individual's exposure to air pollution. For projects proposing new sensitive land uses, because most of the Hub Plan area is within the APEZ, most new sensitive use development projects would be required to install the enhanced filtration required by *Health Code* article 38.

The results of the assessment indicate that the geographic extent of the APEZ would be expanded with implementation of the Hub Plan to encompass additional parcels in areas surrounding the current APEZ. **Figure 3.D-2**, p. 3.D-71, depicts the existing APEZ map pursuant to Health Code article 38. Overlaid on this figure are parcels within the Hub Plan area that would meet APEZ criteria with the implementation of the Hub Plan and individual projects at 30 Van Ness Avenue and 98 Franklin Street.

The Hub Plan would result in a significant health risk impact because it would exceed cancer risk and $PM_{2.5}$ concentration thresholds of seven in 1 million and 0.2 $\mu g/m^3$, respectively. As discussed in the Regulatory Framework, article 38 requires the planning and public health departments to periodically update the analysis and mapping identifying the APEZ, at least every five years. Mitigation Measure M-AQ-7e, Implementation of Mitigation Measures M-AQ-4b and M-AQ-5c for Projects within the Existing or Future Air Pollutant Exposure Zone, below, would require the planning and public health departments to update the APEZ in accordance with updates to dispersion modeling conducted for the Hub Plan.

Mitigation Measures

The following mitigation measures would be required for subsequent development projects proposed in the Hub Plan area, with the exception of individual development projects at 30 Van Ness Avenue Project or the 98 Franklin Street Project (unless otherwise noted), which are analyzed separately under Impact AQ-9.

M-AQ-5c ***Best Available Control Technology for Projects with Diesel Generators and Fire Pumps***. (This mitigation measure is provided in full under Impact AQ-5 and is applicable to the 98 Franklin Street Project.)

M-AQ-7a ***Additional Air Quality Improvement Strategies to Reduce Hub Plan-Generated Emissions and Population Exposure.*** The planning department, in cooperation with other interested agencies or organizations, shall consider additional actions for the Hub Plan area with the goal of reducing Hub Plan–generated emissions and population exposure including, but not limited to:

- Collection of air quality monitoring data that could provide decision makers with information to identify specific areas of the Hub Plan were changes in air quality have occurred and focus air quality improvements on these areas;
- Additional measures that could be incorporated into the City's Transportation Demand Management program with the goal of further reducing vehicle trips;
- Incentives for replacement or upgrade of existing emissions sources;
- Other measures to reduce air pollutant exposure, such as the distribution of portable air cleaning devices; and
- Public education regarding reducing air pollutant emissions and their health effects.

The department shall develop a strategy to explore the feasibility of additional air quality improvements within four years of Hub Plan adoption.

M-AQ-7b ***Air Quality Analysis That Considers the Siting of Uses That Emit Particulate Matter ($PM_{2.5}$), Diesel Particulate Matter, or Other Toxic Air Contaminants.*** To minimize potential exposure of sensitive receptors to diesel particulate matter or substantial levels of toxic air contaminants as part of everyday operations from stationary or area sources (other than the sources listed in Mitigation Measure M-AQ-5c), the San Francisco Planning Department shall require, during the environmental review process of subsequent development projects, but not later than the first project approval action, the preparation of an analysis by a qualified air quality specialist that includes a site survey to identify residential or other sensitive receptors within 1,000 feet of the project site. For purposes of this measure, sensitive receptors are considered to include housing units; child care centers; schools (high school age and below); and inpatient health care facilities, including nursing or retirement homes and similar establishments. The assessment shall also include an estimate of emissions of toxic air contaminants from the source from the subsequent development and shall identify all feasible measures to reduce emissions. These measures shall be incorporated into the project prior to the first approval action.

M-AQ-7c ***Design Land Use Buffers Around Active Loading Docks.*** For subsequent development projects that include loading docks that would be expected to accommodate more than 100 trucks per day (or 40 transportation refrigeration trucks per day), locate truck activity areas, including loading docks and delivery areas, as far away from sensitive receptors (such as residences, child care, or medical facilities) as feasible.

M-AQ-7d ***Implementation of Mitigation Measures M-AQ-4b and M-AQ-5c for Projects within the Existing or Future Air Pollutant Exposure Zone.*** All construction within the existing APEZ or newly added parcels that meet the APEZ criteria (Block 3505, Lots 007 and 008; Block 3503, Lot 004; and Block 0814, Lot 003), shall implement M-AQ-4b. All subsequent development projects that include diesel generators or diesel fire pumps within the existing APEZ or newly added parcels that meet the APEZ criteria, as listed above, shall implement Mitigation Measure M-AQ-5c.

M-AQ-7e ***Update Air Pollution Exposure Zone.*** The Department of Public Health in coordination with the planning department is required to update the Air Pollution Exposure Zone Map in San Francisco Health Code article 38 at least every five years. The planning department shall coordinate with the Department of Public Health to update the Air Pollution Exposure Zone, taking into account updated health risk methodologies and traffic generated by the Hub Plan.

Significance after Mitigation

Mitigation Measure M-AQ-7b in combination with Mitigation Measure M-AQ-5c, which is discussed under Impact AQ-5, above, would reduce emissions of $PM_{2.5}$ and other TACs from new stationary sources. As noted above under Impact AQ-5, generators with Tier 4 engines emit 75 to 85 percent fewer DPM and $PM_{2.5}$ emissions than Tier 2 engines, while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards. Mitigation Measure M-AQ-7c would protect sensitive land uses from emissions associated with truck activity areas, thereby reducing any exposure of existing or new sensitive land uses to Hub Plan–generated stationary-source emissions. Mitigation Measure M-AQ-7d would require Mitigation Measure M-AQ-4b to be implemented for all projects within the Hub Plan area that propose construction on newly added parcels that meet the APEZ criteria. Mitigation Measure M-AQ-7e would require the Public Health Department, in coordination with the planning department, to update the Air Pollution Exposure Zone Map taking into account the modeling results from the Hub Plan analysis above.

Source: San Francisco Planning Department 2019.

ICF Graphics ... 00700.17 (6-10-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.D-3
Air Exposure Pollutant Zone Under Cumulative (2040) and Plan Scenarios

The effectiveness of M-AQ-5c has been quantitatively evaluated and the results are shown in **Table 3.D-11** and **Table 3.D-12**, pp. 3.D-68 and 3.D-69, for cancer risk and $PM_{2.5}$ concentrations, respectively. As shown there, even with mitigation, the Hub Plan would result in a cancer risk of 37 per 1 million persons exposed and $PM_{2.5}$ concentrations of 0.12 μg/m³. Given that the Hub Plan's cancer risk impact would exceed the significance threshold of seven per 1 million persons exposed, the Hub Plan's cancer risk impact would remain ***significant and unavoidable.***

Regarding $PM_{2.5}$ concentrations, the Hub Plan's contribution with mitigation would be reduced to a level that would be below the threshold of 0.2 μg/m³. However, given the uncertainty associated with the timing, duration, and intensity of construction for subsequent development projects, it is possible that sensitive receptors could be exposed to construction emissions from multiple development projects occurring at the same time, which could result in an exceedance of the $PM_{2.5}$ concentration threshold. Therefore, because it cannot be stated with certainty that future sensitive receptors would not be exposed to an exceedance of the $PM_{2.5}$ concentration threshold, it is concluded that $PM_{2.5}$ concentrations from Hub Plan implementation would also be ***significant and unavoidable***.

Impact AQ-8. Construction and operational activities associated with the streetscape and street network improvements proposed as part of the Hub Plan would not result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. (Less than Significant)

Streetscape and street network improvements that are proposed as part of the Hub Plan would be subject to the conditions of the Clean Construction Ordinance. This ordinance requires implementation of measures to reduce diesel emissions generated at publicly funded construction sites and thereby related potential health risks. Specifically, the ordinance requires that City-funded projects employing heavy off-road equipment for 20 days or more that are within 1,000 feet of a sensitive receptor and within the APEZ use diesel engines that meet or exceed either EPA or air board Tier 2 off-road emission standards and be retrofitted with an air board Level 3 VDECS. Additionally, the ordinance prohibits the use of portable diesel engines where alternative sources of power are available (i.e., requires use of available utility-provided electricity in lieu of a diesel generator), limits idling of diesel engines, requires that equipment be properly maintained and tuned, and mandates submittal to the authorizing City department of a construction emissions minimization plan prior to the start of work. Waivers to the equipment requirements may be granted only if compliance is not feasible or in case of emergency. For projects outside the APEZ, the ordinance requires the use of biodiesel fuel grade B20 or higher for off-road diesel equipment and use of Tier 2 or similar off-road equipment. As discussed under Impact AQ-7, above, generators with Tier 4 engines emit 75 to 85 percent fewer DPM and $PM_{2.5}$ emissions than Tier 2 engines, while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards. Compliance with the engine requirements in the Clean

Construction Ordinance would ensure that construction-related health risks from streetscape and street network improvement projects would not be significant.

Although the streetscape and street network improvement projects would not be anticipated to generate new vehicle trips or induce a substantial number of additional vehicle trips, streetscape and street network projects that remove travel lanes could result in increased congestion or encourage drivers to use other nearby streets, resulting in redistribution of vehicle trips along the roadway network. As discussed in Impact AQ-3, above, quantitative analysis of the criteria air pollutant impacts of the Sixth Street Improvement project was conducted. That project included elements that would be similar to (and likely not greater than) the streetscape and street network improvements proposed under the Hub Plan. The analysis concluded that at most, the streetscape and street network improvements could result in an increase of particulate matter on the order of 0.1 lb/day. Assuming all the particulate matter is diesel particulate, this would not be a substantial increase in emissions because these emissions would disperse from the point at which the pollutants are emitted, substantially reducing the actual exposure one would receive at sensitive receptor locations. Therefore, because the proposed streetscape and street network improvement projects would be similar to the Sixth Street Improvement Project, which found health risk impacts to be less than significant, health risk impacts from Hub Plan streetscape and street network improvement projects would similarly be ***less than significant***.

Impact AQ-9. During construction and operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. (Less than Significant with Mitigation)

30 Van Ness Avenue Project

Construction and operation of the 30 Van Ness Avenue Project would result in emissions of $PM_{2.5}$ and toxic air contaminants and expose onsite and nearby sensitive receptors to substantial pollutant concentrations. Construction activities that would result in such emissions include demolition, excavation, building construction and interior and exterior finishing. Off-road diesel equipment used for clearing and grading, materials handling and installation, and other construction activities would generate diesel PM and TAC emissions. Operational emissions would result from periodic testing of the backup diesel generators and additional traffic volumes that would be generated by the 30 Van Ness Avenue Project. Therefore, a project-specific health risk assessment was conducted for the 30 Van Ness Avenue Project.

The project-specific health risk analysis evaluated cancer risks and $PM_{2.5}$ concentrations resulting from the construction and operations of the proposed project at 30 Van Ness Avenue on the surrounding community, including both onsite and offsite sensitive receptors. The methodology employed for calculating health risks associated with individual projects (at 30 Van Ness Avenue and also 98 Franklin Street, discussed below) were similar to what was used for the Hub Plan–level health risk analysis discussed above, under Impact AQ-7, with adjustments made to account for the specific sources for these individual projects. The project-specific sources that were considered in the analysis of the individual projects at 30 Van Ness Avenue and 98 Franklin Street were the project-generated traffic and the emissions from each proposed project's generator. Because the 30 Van Ness Avenue and 98 Franklin Street projects' vehicle trip emissions are already accounted for in the Hub Plan–level analysis, a proportional analysis of the Hub Plan–generated traffic compared with traffic generated by the individual projects was conducted to determine the contribution of traffic-related cancer risk and $PM_{2.5}$ attributable to each project. In addition, emissions associated with the construction of each individual project were also incorporated into the analysis, based on project specific information. More information regarding the emissions estimation assumptions and health risk modeling conducted for the 30 Van Ness Avenue Project can be found in the Air Quality Technical Report.[65]

Results of the health risk assessment are reported for the MEISR. The health risk from the project at all other sensitive receptor locations would be less than that reported for the MEISR. Because cancer risk is evaluated over a 30-year period, the cancer risk analysis below presents the risk that would result when exposed to both construction and operational emissions together when assessing the cancer risk impact to offsite sensitive receptors. The MEISR from the "baseline plus 30 Van Ness Avenue Project" scenario was determined by finding the maximum project impact from the sum of the following sources: 30 Van Ness Avenue Project operational traffic emissions, 30 Van Ness Avenue Project generator emissions, and 30 Van Ness Avenue Project construction emissions. Onsite receptors would not be exposed to construction period emissions, so the health risk contribution from construction emissions to onsite receptors is not applicable.

Following the determination of the MEISR from project-only emissions sources, the results from the background sources (Baseline (2020) No Hub Plan Scenario) were added to understand the overall health risk impact at each offsite and onsite MEISR.

Cancer Risk

For the offsite MEISR, the cancer risk contribution from construction and operation associated with 30 Van Ness Avenue for the unmitigated scenario[66] would be 202 in 1 million, as shown in the "Total Project Contribution" row of **Table 3.D-13**. The total cancer risk at the offsite MEISR

---

65 Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California*, July 10, 2019.

66 The unmitigated scenario was evaluated assuming no control measures for the diesel-powered construction equipment and generators. Fleet average emission factors consistent with default assumptions of CalEEMod® 2016.3.2 were used.

would be 496 in 1 million. The breakdown of individual project sources contributing to the cancer risk would be as follows:

- 30 Van Ness Avenue Project construction would contribute 201 in 1 million
- 30 Van Ness Avenue Project generators would contribute 0.90 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 0.11 in 1 million

For the onsite MEISR, which would not be exposed to the 30 Van Ness Avenue Project construction emissions, the cancer risk contribution from unmitigated operation of 30 Van Ness Avenue would be 22 in 1 million, as shown in **Table 3.D-13**. The total cancer risk at the onsite MEISR would be 281 in 1 million. The breakdown of individual sources contributing to the cancer risk would be as follows:

- 30 Van Ness Avenue Project generators would contribute 21 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 0.10 in 1 million

As shown in the **Table 3.D-13**, below, the project's contribution to cancer risk at onsite and offsite receptors would be 202 and 22 in 1 million, respectively, which would exceed the significance threshold of seven per 1 million persons exposed, resulting in a ***significant impact***.

Implementation of Mitigation Measure M-AQ-9a and M-AQ-9b, below would be required to reduce the cancer risk from the 30 Van Ness Avenue Project. As noted above in Impact AQ-5 and Impact AQ-7, generators with Tier 4 engines emit 75 to 85 percent fewer diesel particulate matter and $PM_{2.5}$ emissions than Tier 2 engines.

TABLE 3.D-13. BASELINE (2020) + 30 VAN NESS AVENUE PROJECT CANCER RISK AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	Cancer Risk (per 1 million persons exposed)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Project Cancer Risk Contributions				
Construction[1]	201	4.4		
Generators[2]	0.90	0.12	21	2.9
30 Van Ness Avenue Project Traffic	0.11	0.11	0.10	0.10
Total Project Contribution	202[3]	4.6	22	3.0
Significance threshold for project cancer risk contribution within an APEZ	7	7	7	7
Significant?	Yes	No	Yes	No

TABLE 3.D-13. BASELINE (2020) + 30 VAN NESS AVENUE PROJECT CANCER RISK AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	Cancer Risk (per 1 million persons exposed)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Baseline (2020) No Hub Plan Cancer Risk Contributions				
Baseline (2020) No Hub Plan Traffic	251	251	217	217
Rail Sources	0.80	0.80	0.78	0.78
Maritime Sources	37	37	37	37
Existing Stationary Sources	4.9	4.9	4.7	4.7
Total Cancer Risk at MEISR	496	298	281	262

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors would not exposed to construction emissions.

2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.

3. Summing of the individual sources may not add exactly to the total due to rounding.

Mitigation Measures

The following mitigation measure would be applicable to the individual proposed project at 30 Van Ness Avenue.

M-AQ-9a: ***Construction Emissions Minimization Plan for 30 Van Ness Avenue Project.*** Prior to construction, the 30 Van Ness Avenue project sponsor shall submit a construction emissions minimization plan to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. Upon approval of construction emissions minimization plan, the sponsor shall implement the plan. The plan shall detail project compliance with the following requirements:

1. All construction equipment shall contain engine tiers consistent with the U.S. Environmental Protection Agency engine tiers as provided in **Table M-AQ-9a**, Construction Equipment Summary for 30 Van Ness Avenue Project, below. Documentation of equipment tiers for in-use equipment shall be maintained onsite as part of the plan.

2. All off-road engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99), if commercially available.

3. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.
4. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.
5. The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel use and hours of operation.

The construction emissions minimization plan shall be kept onsite and available for review during working hours by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the construction emissions minimization plan and a way to request a copy of the plan. The project sponsor shall provide copies of the plan as requested. Should any deviations from the requirements or the equipment in **Table M-AQ-9a** be proposed prior to or during construction, the project sponsor shall demonstrate, to the satisfaction of the ERO, that an equivalent amount of emissions reduction would be achieved.

Reporting. Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 5, above.

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 5.

Certification Statement and Onsite Requirements. Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the construction emissions minimization plan, and (2) all applicable requirements of the construction emissions minimization plan have been incorporated into contract specifications.

TABLE M-AQ-9A: CONSTRUCTION EQUIPMENT SUMMARY FOR 30 VAN NESS AVENUE PROJECT

Phase	Project Equipment at Site	Horsepower	Equipment Quantity	Usage Hours per Weekday	Usage Hours per Saturday	Controlled Equipment Details		Equipment Usage Data	
						Fuel	Control	Start	End
Demolition	Concrete/Industrial Saws	81	1	2.0	2.0	Diesel	Tier 4f	5/1/2020	11/1/2020
	Rubber Tired Dozers	247	1	1.0	1.0	Diesel	Tier 4f	5/1/2020	11/1/2020
	Sweepers/Scrubbers	64	1	2.0	2.0	Diesel	Tier 4f	5/1/2020	11/1/2020
	Excavators	158	1	2.4	2.4	Diesel	Tier 4f	5/1/2020	11/1/2020
Site Preparation	Tractors/Loaders/Blackhoes	97	1	8.0	8.0	Diesel	Tier 4f	11/2/2020	1/31/2021
	Excavators	158	3	8.0	8.0	Diesel	Tier 4f	11/2/2020	1/31/2021
	Road Cleaner/Sweepre/Scrubber	64	1	4.0	4.0	Diesel	Tier 4f	11/2/2020	1/31/2021
Grading	Rubber Tired Dozers	247	1	1.0	1.0	Diesel	Tier 4f	2/1/2021	4/30/2021
	Tractors/Loaders/Backoes	97	2	6.0	6.0	Diesel	Tier 4f	2/1/2021	4/30/2021
	Shoring Equipment (Boring Rigs)	221	2	2.4	2.4	Diesel	Tier 4f	2/1/2021	3/1/2021
	Tie Back Equipment (Drilling Rigs)	221	2	2.4	2.4	Diesel	Tier 4f	3/2/2021	3/30/2021
	Ground Improvement (Drilling Rig)	221	1	2.4	2.4	Diesel	Tier 4f	4/1/2021	4/30/2021
	Sweepers/Scrubbers	64	1	8.0	8.0	Diesel	Tier 4f	2/1/2021	4/3/2021
Building Construction	Cranes	231	1	3.0	3.0	Electric	N/A	8/1/2021	12/1/2022
	Forklifts	89	2	4.5	4.5	Propane	N/A	5/1/2021	12/31/2023
	Tractors/Loaders/Backoes	97	2	2.0	2.0	Diesel	Tier 4f	5/1/2021	12/31/2023
	Tower Crane	231	1	3.0	3.0	Electric	N/A	9/1/2021	5/1/2022
	Aerial Lifts (#1)	63	1	8.0	8.0	Electric	N/A	11/1/2021	3/1/2023
	Aerial Lifts (#2)	63	1	8.0	8.0	Electric	N/A	11/1/2021	5/1/2022
	Concrete Pumps	84	2	2.0	2.0	Electric	N/A	7/1/2021	10/1/2022
	Welders	46	6	0.80	0.80	Electric	N/A	5/1/2021	12/31/2023

Phase	Project Equipment at Site	Horsepower	Equipment Quantity	Usage Hours per Weekday	Usage Hours per Saturday	Controlled Equipment Details		Equipment Usage Data	
						Fuel	Control	Start	End
Paving	Tractors/Loaders/Backhoes	97	1	5.3	5.3	Diesel	Tier 4f	11/1/2022	5/1/2023
	Concrete/Industrial Saws	81	2	2.0	2.0	Diesel	Tier 4f	11/1/2022	5/1/2023
Architectural Coating	Air Compressors	78	1	3.0	3.0	Electric	N/A	11/1/2021	1/1/2023

Notes: Project equipment was provided by the project sponsor.

Abbreviations:

N/A = not applicable

Tier 4f = Tier 4 Final

Tier 4i = Tier 4 Interim

M-AQ-9b ***Best Available Control Technology for Diesel Generators for 30 Van Ness Avenue Project.*** The two proposed diesel generators shall have engines that meet Tier 4 Final emission standards and be fueled with renewable diesel, R99, if commercially available. The project sponsor shall limit testing of the emergency diesel generators to no more than 20 hours per year. Each diesel backup generator permit shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator from the San Francisco Department of Building Inspection. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment and any future replacement of the diesel backup generators shall be required to be consistent with these emissions specifications. The project sponsor shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and provide this information for review to the planning department within three months of requesting such information.

Significance After Mitigation

Table 3.D-13, p. 3.D-79, summarizes the results from the mitigated scenario at both offsite and onsite MEISRs, which were evaluated assuming generators and diesel-powered construction equipment would meet the requirements of Mitigation Measures M-AQ-9a and M-AQ-9b. As shown in **Table 3.D-13,** p. 3.D-79, in the mitigated columns, implementation of these mitigation measures would reduce cancer risk levels at both offsite and onsite MEISRs to 4.6 and 3.0, respectively. Therefore, with mitigation, the cancer risk from the 30 Van Ness Avenue Project would be reduced to a ***less-than-significant*** level.

$PM_{2.5}$ Concentration

For the offsite MEISR, the maximum $PM_{2.5}$ concentration from construction and operation for the unmitigated scenario would be 0.60 μg/m^3, as shown in the "Total Project Contribution" row of **Table 3.D-14**. The total $PM_{2.5}$ concentration at the offsite MEISR would be 10.1 μg/m^3. The breakdown of individual project-generated sources contributing to $PM_{2.5}$ concentrations would be as follows:

- 30 Van Ness Avenue Project construction would contribute 0.59 μg/m^3
- 30 Van Ness Avenue Project generators would contribute 0.0024 μg/m^3
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 7.5E-04 μg/m^3

TABLE 3.D-14. BASELINE (2020) + 30 VAN NESS AVENUE PROJECT $PM_{2.5}$ CONCENTRATION AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	$PM_{2.5}$ Concentration (μg/m³)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Project $PM_{2.5}$ Contributions				
Construction[1]	0.59	0.020		
Generators[2]	0.0024	3.1E-04	0.029	0.0038
30 Van Ness Avenue Project Traffic	7.5E-04	7.5E-04	7.8E-04	7.8E-04
Total Project Contribution	0.60	0.021	0.030	0.0046
Significance threshold for project $PM_{2.5}$ contribution within an APEZ	0.2	0.2	0.2	0.2
Significant?	**Yes**	No	No	No
Baseline (2020) No Hub Plan $PM_{2.5}$ Contributions				
Baseline (2020) No Hub Plan Traffic	1.6	1.6	1.6	1.6
Rail Sources	0.0015	0.0015	0.0015	0.0015
Maritime Sources	0.048	0.048	0.048	0.048
Existing Stationary Sources	0.049	0.049	0.048	0.048
Background Concentration[3]	7.8	7.8	7.8	7.8
Total $PM_{2.5}$ Concentration at MEISR	10.1	9.5	9.5	9.5

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors would not be exposed to construction emissions.
2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.
3. The background $PM_{2.5}$ concentration is the average annual monitored $PM_{2.5}$ concentration from the air district's 16th and Arkansas Street monitoring station.

For the onsite MEISR, which would not be exposed to the 30 Van Ness Avenue Project construction emissions, the $PM_{2.5}$ concentration from unmitigated operation would be 0.0.030 μg/m³, as shown in **Table 3.D-14**, p. 3.D-85**.** The total $PM_{2.5}$ concentration at the onsite MEISR would be 9.5 μg/m³. The breakdown of individual sources contributing to $PM_{2.5}$ concentrations would be as follows:

- 30 Van Ness Avenue Project generators would contribute 0.029 μg/m³
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 7.8E-04 μg/m³

Therefore, because the 30 Van Ness Avenue Project would result in $PM_{2.5}$ emissions that would be below 0.2 μg/m³, the 30 Van Ness Avenue Project would not result in significant $PM_{2.5}$

concentrations for onsite sensitive receptors. $PM_{2.5}$ emissions from the project at onsite sensitive receptors would be less than significant.

As shown in **Table 3.D-14**, p. 3.D-85, the project's contribution to $PM_{2.5}$ concentration at offsite receptors (only) would be 0.60 μg/m^3, which would exceed the significance threshold of 0.2 μg/m, resulting in a ***significant impact***. Implementation of Mitigation Measure M-AQ-9a, Requirement for Construction Emissions Minimization Plan for 30 Van Ness Avenue Project, and Mitigation Measure M-AQ-9b, Requirement for Best Available Control Technology for Diesel Generators for 30 Van Ness Avenue Project, would be required to reduce the $PM_{2.5}$ concentration.

The effectiveness of the above mitigation measures were quantitatively evaluated. **Table 3.D-14**, p. 3.D-85, summarizes the results from the mitigated scenarios for both offsite and onsite MEISRs**,** which were evaluated assuming that the proposed generators and diesel-powered construction equipment would meet Tier 4 standards or equivalent. As shown in **Table 3.D-14**, p. 3.D-85, in the mitigated columns, implementation of these mitigation measures would reduce $PM_{2.5}$ concentrations at offsite MEISRs to 0.021 μg/m, which is below the significance threshold of 0.2 μg/m. Therefore, with the above mitigation measures, the $PM_{2.5}$ concentration from the 30 Van Ness Avenue Project would be reduced to a ***less-than-significant*** level.

98 Franklin Street

Construction and operation of the 98 Franklin Street Project would result in emissions of $PM_{2.5}$ and toxic air contaminants and expose onsite and nearby sensitive receptors to substantial pollutant concentrations. Construction activities that would result in such emissions include demolition, excavation, building construction and interior and exterior finishing. Off-road diesel equipment used for clearing and grading, materials handling and installation, and other construction activities would generate diesel PM and TAC emissions. Operational emissions would result from periodic testing of the backup diesel generator and additional traffic volumes that would be generated by the 98 Franklin Street Project. Therefore, a project-specific health risk assessment was conducted for the 98 Franklin Street Project.

The project-specific health risk analysis evaluated excess cancer risks and $PM_{2.5}$ concentrations resulting from the construction and operations of the proposed project at 98 Franklin Street on the surrounding community, including both onsite and offsite sensitive receptors.

Results of the health risk assessment are reported for MEISR. The health risk from the project at all other sensitive receptor locations would be less than that reported for the MEISR. Because cancer risk is evaluated over a 30-year period, the cancer risk analysis below presents the risk that would result when exposed to both construction and operational emissions together when assessing the cancer risk impact to offsite sensitive receptors. The MEISR from the "baseline plus 98 Franklin Street Project" scenario was determined by finding the maximum project impact from the following sources: 98 Franklin Street Project operational traffic emissions, 98 Franklin Street Project generator emissions, and 98 Franklin Street Project construction emissions. Onsite receptors would not be exposed to construction period emissions, so the health risk contribution from construction emissions to onsite receptors is not applicable.

Following the determination of the MEISR from project-only impacts, the results from the background sources (Baseline (2020) No Hub Plan Scenario) were added to understand the overall health risk impact at each offsite and onsite receptor. More information regarding the emissions estimation assumptions and health risk modeling conducted for the 98 Franklin Street Project can be found in the Air Quality Technical Report.[67]

Cancer Risk

For the offsite MEISR, the cancer risk contribution from construction and operation associated with 98 Franklin Street for the unmitigated scenario[68] would be 72 in 1 million, as shown in the "Total Project Contribution" row of **Table 3.D-15**. The total cancer risk at the offsite MEISR would be 305 in 1 million. The breakdown of individual project sources contributing to the cancer risk would be:

- 98 Franklin Street Project construction would contribute 70 in 1 million
- 98 Franklin Street Project generators would contribute 1.6 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 0.024 in 1 million

TABLE 3.D-15. BASELINE (2020) + 98 FRANKLIN STREET PROJECT CANCER RISK AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	Cancer Risk (per 1 million persons exposed)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Project Caner Risk Contributions				
Construction[1]	70	5.6		
Generators[2]	1.6	0.22	6.1	0.82
98 Franklin Street Project Traffic	0.024	0.024	0.019	0.019
Total Project Contribution	72	5.8	6.2	0.84
Significance threshold for project cancer risk contribution within an APEZ	7	7	7	7
Significant?	**Yes**	No	No	No

67 Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California*, July 10, 2019.

68 The unmitigated scenario was evaluated assuming no control measures for the diesel-powered construction equipment and generators. Fleet average emission factors consistent with default assumptions of CalEEMod® 2016.3.2 were used.

TABLE 3.D-15. BASELINE (2020) + 98 FRANKLIN STREET PROJECT CANCER RISK AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	Cancer Risk (per 1 million persons exposed)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Baseline (2020) No Hub Plan Cancer Risk Contributions				
Baseline (2020) No Hub Plan Traffic	193	193	183	183
Rail Sources	0.84	0.84	0.83	0.83
Maritime Sources	35	35	35	35
Existing Stationary Sources	4.3	4.3	4.1	4.1
Total Cancer Risk at MEISR	305	239	229	224

Source: Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects*, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors would not be exposed to construction emissions.

2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.

For the onsite MEISR, which would not be exposed to the 98 Franklin Street Project construction emissions, the cancer risk contribution from unmitigated operation would be 6.2 in 1 million, as shown in **Table 3.D-15**, and below the threshold of 7 in 1 million; therefore, it would be considered a less-than-significant impact**.** The total cancer risk at the onsite MEISR would be 229 in 1 million. The breakdown of individual project sources contributing to the cancer risk would be as follows:

- 98 Franklin Street Project generators would contribute 6.1 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 0.019 in 1 million

As shown in the **Table 3.D-15**, the project's contribution to cancer risk at offsite receptors (only) would be 72 per 1 million, which would exceed the significance threshold of seven per 1 million persons exposed, resulting in a ***significant impact***.

Implementation of Mitigation Measure M-AQ-9c, Construction Equipment Summary for 98 Franklin Street Project, and Mitigation Measure M-AQ-5c, discussed under Impact AQ-5, above, would be required to reduce the cancer risk. As noted above in those discussions, generators with Tier 4 engines emit 75 to 85 percent fewer DPM and $PM_{2.5}$ emissions than Tier 2 engines.

Mitigation Measures

The following mitigation measure would be applicable to the individual proposed project at 98 Franklin Street.

M-AQ-5c: ***Best Available Control Technology for Projects with Diesel Generators and Fire Pumps***

M-AQ-9c: ***Construction Emissions Minimization Plan for 98 Franklin Street Project.*** Prior to construction, the 98 Franklin Street project sponsor shall submit a construction emissions minimization plan to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. Upon approval of plan, the sponsor shall implement the plan. The plan shall detail project compliance with the following requirements:

1. All construction equipment shall contain engine tiers consistent with the U.S. Environmental Protection Agency engine tiers as provided in **Table M-AQ-9c**, Construction Equipment Summary for 98 Franklin Street Project, below. Documentation of equipment tiers for in-use equipment shall be maintained onsite as part of the plan.
2. All off-road engines shall be fueled with renewable diesel (at least 99 percent renewable diesel or R99), if commercially available.
3. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.
4. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.
5. The construction emissions minimization plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to, equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel use and hours of operation.

The construction emissions minimization plan shall be kept onsite and available for review during working hours by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the construction emissions minimization plan and a way to request a copy of the plan. The project sponsor shall provide copies of the plan as requested. Should any deviations from the requirements or the equipment in **Table M-AQ-9c** be proposed prior to or during construction, the project sponsor shall demonstrate, to the satisfaction of the ERO, that an equivalent amount of emissions reduction would be achieved.

Reporting. Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in Paragraph 5, above.

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in Paragraph 5.

Certification Statement and Onsite Requirements. Prior to the commencement of construction activities, the project sponsor shall certify (1) compliance with the construction emissions minimization plan, and (2) all applicable requirements of the construction emissions minimization plan have been incorporated into contract specifications.

TABLE M-AQ-9C: CONSTRUCTION EQUIPMENT SUMMARY FOR 98 FRANKLIN STREET PROJECT

Phase	Project Equipment at Site	Horsepower	Equipment Quantity	Usage Hours per Weekday	Controlled Equipment Details		Equipment Usage Data	
					Fuel	Control	Start	End
Demolition	Concrete/Industrial Saws	81	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
	Excavators	67	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
	Rubber Tired Dozers	247	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
	Skid Steer Loaders	73	1	8.0	Diesel	Tier 4i	6/1/2021	6/5/2021
Shoring	Drill Rig	500	1	4.5	Diesel	Tier 4i	6/8/2021	8/7/2021
	Excavators	67	1	1.5	Diesel	Tier 4i	6/8/2021	8/7/2021
	Cranes	275	1	1.0	Diesel	Tier 4i	6/8/2021	8/7/2021
	Tieback rig	250	1	3.0	Diesel	Tier 4i	6/8/2021	8/7/2021
	Rough Terrain Forklift	100	1	1.0	Diesel	Tier 4i	6/8/2021	8/7/2021
	Generator	40	1	4.0	Diesel	Tier 4f	6/8/2021	8/7/2021
Excavation	Excavators	250	3	6.0	Diesel	Tier 4i	8/10/2021	10/30/2021
	Skid Steer Loaders	75	2	6.0	Diesel	Tier 4i	8/10/2021	10/30/2021
Building Construction	Cranes	231	1	3.0	Electric	N/A	11/2/2021	8/5/2023
	Forklifts	89	1	2.1	Propane	N/A	11/2/2021	8/5/2023
	Welders	46	2	0.16	Electric	N/A	11/2/2021	8/5/2023
	Sissor lifts	89	1	1.5	Electric	N/A	11/2/2021	8/5/2023
	Signal Boards	6.0	2	8.0	Electric	N/A	11/2/2021	8/5/2023
Paving	Pavers	130	1	4.0	Diesel	Tier 4i	8/1/2023	8/5/2023
	Rollers	50	1	4.0	Diesel	Tier 4i	8/1/2023	8/5/2023
Architectural Coating	Airless Paint Sprayers	78	3	4.0	Electric	N/A	1/7/2023	8/5/2023

Notes: Project equipment was provided by the project sponsor.

Abbreviations:

N/A = not applicable

Tier 4f = Tier 4 Final

Tier 4i = Tier 4 Interim

Significance After Mitigation

The effectiveness of the above mitigation measures was quantitatively evaluated. **Table 3.D-15**, p. 3.D-87, summarizes the results from the mitigated scenario for both offsite and onsite MEISRs, which were evaluated assuming generators and diesel-powered construction equipment would meet Tier 4 standards or equivalent. For construction equipment, certain diesel-powered equipment (identified in Table M-AQ-9c) was assumed to use non-diesel fuel (i.e., propane) or electricity. As shown in **Table 3.D-15**, p. 3.D-87, in the mitigated columns, implementation of these mitigation measures would reduce cancer risk levels at offsite MEISRs to 5.8 per 1 million persons exposed, which is below the significance threshold of seven per 1 million persons exposed. Therefore, with the above mitigation measures, the cancer risk impact from the 98 Franklin Street Project would be reduced to a ***less-than-significant*** level.

$PM_{2.5}$ Concentration

For the offsite MEISR, the maximum $PM_{2.5}$ concentration contribution from construction and operation for the unmitigated scenario would be 0.29 μg/m^3, as shown in the "Total Project Contribution" row of **Table 3.D-16**. The total $PM_{2.5}$ concentration at the offsite MEISR would be 9.5 μg/m^3. The breakdown of individual project-generated sources contributing to $PM_{2.5}$ concentrations would be as follows:

- 98 Franklin Street Project construction would contribute 0.28 μg/m^3
- 98 Franklin Street Project generators would contribute 0.0024 μg/m^3
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 1.8E-04 μg/m^3

For the onsite MEISR, which would not be exposed to the 98 Franklin Street Project construction emissions, the $PM_{2.5}$ concentration contribution from unmitigated operation would be 0.0084 μg/m^3, as shown in **Table 3.D-16.** The total $PM_{2.5}$ concentration at the onsite MEISR would be 9.3 μg/m^3. The breakdown of individual project-generated sources contributing to $PM_{2.5}$ concentrations would be as follows:

- 98 Franklin Street Project generators would contribute 0.0083 μg/m^3 for
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 1.5E-04 μg/m^3

As shown in **Table 3.D-16**, the project's contribution to $PM_{2.5}$ concentration at offsite receptors (only) would exceed the significance threshold of 0.2 μg/m^3, resulting in a ***significant impact***. Implementation of Mitigation Measure M-AQ-9c, discussed above, and Mitigation Measure M-AQ-5c, discussed under Impact AQ-5, above, would be required to reduce the $PM_{2.5}$ concentration.

As shown in **Table 3.D-16**, in the "mitigated" columns, implementation of mitigation measures would reduce $PM_{2.5}$ concentration at the offsite MEISRs to 0.032 μg/m³, which is less than the significance threshold of 0.2 μg/m³. Therefore, with mitigation, the $PM_{2.5}$ concentration from the 98 Franklin Street Project would be reduced to a ***less-than-significant*** level.

TABLE 3.D-16. BASELINE (2020) + 98 FRANKLIN STREET PROJECT $PM_{2.5}$ CONCENTRATION AT THE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	$PM_{2.5}$ Concentration (μg/m³)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
Project $PM_{2.5}$ Contributions				
Construction[1]	0.28	0.032		
Generators[2]	0.0024	3.2E-04	0.0083	0.0011
98 Franklin Street Project Traffic	1.8E-04	1.8E-0	1.5E-04	1.5E-04
Total Project Contribution	0.29	0.032	0.0084	0.0012
Significance threshold for project $PM_{2.5}$ contribution within an APEZ	0.2	0.2	0.2	0.2
Significant?	Yes	No	No	No
Baseline (2020) No Hub Plan $PM_{2.5}$ Contributions				
Baseline (2020) No Hub Plan Traffic	1.4	1.4	1.4	1.4
Rail Sources	0.0016	0.0016	0.0016	0.0016
Maritime Sources	0.046	0.046	0.045	0.045
Existing Stationary Sources	0.044	0.044	0.043	0.043
Background Concentration[3]	7.8	7.8	7.8	7.8
Total $PM_{2.5}$ Concentration at MEISR	9.5	9.3	9.3	9.3

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors would not be exposed to construction emissions.

2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.

3. The background $PM_{2.5}$ concentration is the average annual monitored $PM_{2.5}$ concentration from the air district's 16th and Arkansas Street monitoring station.

ODORS

Impact AQ-10. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue or 98 Franklin Street, would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant)

As stated under the Environmental Setting, above, likely potential sources of odors in the Hub Plan area are generally limited to auto body shops. Some people may find odors from restaurants objectionable at times, although restaurants are unlikely to generate a substantial number of complaints. In addition, air district Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Sources that typically generate odors such as wastewater treatment and pumping facilities; landfills, transfer stations, and composting facilities; petroleum refineries, asphalt batch plants, chemical (including fiberglass) manufacturing, and metal smelters; painting and coating operations; rendering plants; coffee roasters and food processing facilities are generally not present in the Hub Plan area and the Hub Plan does not include zoning changes that would encourage such sources in the Hub Plan area. Moreover, the land uses proposed as part of 30 Van Ness Avenue and 98 Franklin Street individual projects would not create sources of odor. Given the limited number of land uses in the Hub Plan area that would likely be associated with odorous emissions, as described in the Environmental Setting, and given that few, if any, major new odor sources are likely to be developed in the Hub Plan area, as a result of subsequent development projects, streetscape and street network improvements, or individual development projects at 30 Van Ness Avenue and 98 Franklin Street, odor impacts would be ***less than significant*** for all project components.

Cumulative Impacts

Criteria Air Pollutants

Criteria air pollutant impacts are cumulative impacts by nature. Emissions from past, present, and future projects in the region 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.[69] Accordingly, cumulative impacts related to criteria air pollutants are already addressed under the following impacts discussions: Impact AQ-2 for the proposed Hub Plan, Impact AQ-3 for the proposed streetscape and street network improvements, Impact AQ-4 for construction of subsequent development projects proposed under the Hub Plan, Impact AQ-5 for operation of subsequent development projects proposed under the Hub Plan, and Impact AQ-6 for construction and operation of individual development projects at 30 Van Ness Avenue and 98 Franklin Street. The above impact discussions provide a cumulative criteria air pollutant analysis and no further cumulative analysis of criteria air pollutants is provided here.

69 Bay Area Air Quality Management District, CEQA Air Quality Guidelines, May 2017, p. 2-1.

COMMUNITY RISK AND HAZARD IMPACTS

Impact C-AQ-1: The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions. (Significant and Unavoidable with Mitigation)

As described above in Impact AQ-7, the Hub Plan would indirectly result in traffic emissions, emissions from stationary sources and construction emissions. The Hub Plan would also enable the projects at 30 Van Ness Avenue and 98 Franklin Street. Collectively the impacts from these projects constitute the impacts of the Hub Plan and in Impact AQ-7 were found to result in a significant and unavoidable health risk impact. For the cumulative analysis, health risk modeling was conducted for 2040 conditions, consistent with the cumulative transportation analysis, using the same methodologies discussed above for the plan-level analysis. This cumulative analysis evaluated the health risk impact from the following emissions sources at each evaluated receptor point:

Background Emissions Sources

1. Cumulative (2040) No Plan traffic, which includes the traffic impacts from the implementation of the Central SoMa Plan in addition to other background growth in vehicle traffic

Non-road background sources that have impacts on sensitive receptor locations within the modeling domain, including: non-plan or project permitted stationary sources, rail, and maritime sources.

Hub Plan Emissions Sources

1. Hub Plan 2040 Traffic, which also accounts for traffic emissions from the 30 Van Ness Avenue and 98 Franklin Street projects
2. The 30 Van Ness Avenue and 98 Franklin Street project-level construction sources
3. Emergency generators that could be installed for the 11 sites rezoned to allow for structures that are 75 feet or taller, including the generators proposed for the 30 Van Ness Avenue and 98 Franklin Street projects[70]

Similar to the Hub Plan–level analysis discussed above, construction health risk impacts of subsequent development projects are not included in the quantitative cumulative 2040 health risk analysis because this type of analysis requires project-specific information that cannot be ascertained for subsequent development projects at this time (given that no specific projects are

[70] Because building emergency generators for the two projects at 30 Van Ness Avenue and 98 Franklin Street operate at elevation, receptors were modeled on Project buildings and nearby buildings at multiple elevations. The highest impact for each receptor column was conservatively added to the impacts from traffic and other sources as if it were occurring at a ground-level breathing height of 1.8 meters (5.9 ft).

proposed on those sites). However, it is likely that health risks from subsequent development projects would be similar to that discussed above for the 30 Van Ness Avenue and 98 Franklin Street projects. Therefore, it is likely that the contribution to Hub Plan–level cumulative health risks would be greater than the quantitative modeling results reported below.

In addition, there are number of development projects that are independent from the Hub Plan proposed within and near the Hub Plan area that would generate additional air pollutant emissions as part of their construction and operational phases. There are currently approximately 21 cumulative projects within the Hub Plan area or 1,000 feet of the Hub Plan area.[71] These projects are undergoing separate environmental review and some of these projects have required a quantitative health risk analysis. The projects that have required quantitative health risk analyses and the results of those analyses at those project's MEISRs are included in **Table 3.D-17**, below.

Air pollutant emissions that would be generated by construction of the projects in **Table 3.D-17**, as well as other cumulative projects where quantitative health risk modeling was not required would contribute to the cumulative health risk impact at sensitive receptor locations. Should these projects include stationary sources of emissions, they would also contribute to additional cumulative health risks. However, the effects of traffic emissions from these cumulative projects are reasonably accounted for in the 2040 Cumulative No Hub Plan scenario and therefore included in the quantitative total health risk analysis presented here. Thus, because cumulative projects would result in additional construction and possibly stationary source emissions, the cumulative health risk impact is likely greater than what is reported below. However, the Hub Plan area is already almost entirely within an APEZ, meaning that sensitive receptors are already exposed to air pollution at levels that result in a significant health risk. Therefore, a cumulative health risk impact exists and the question is whether the proposed project's contribution to these significant health risks is considerable. As a result, the analysis below focuses on the project's contribution to significant health risks in and near the Hub Plan area.

---

71 In accordance with air district guidance, the cumulative health risk is the summation of the health risk impact from all significant sources within a 1,000-foot radius of a project, in this case the Hub Plan area. See: Bay Area Air Quality Management District, Recommended Methods for Screening and Modeling Local Risks and Hazards, May 2012, pp. 6 and 11. Available online at *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en*, accessed May 8, 2019.

TABLE 3.D-17. QUANTITATIVE HEALTH RISK RESULTS FROM CUMULATIVE PROJECTS

	Address (Case Number)	Project Description	Excess Cancer Risk (in 1 million)	$PM_{2.5}$ Concentration $\mu g/m^3$
1	1629 Market Street (1601 – 1637 Market Street & 1125 Stevenson Street; 53 Colton Street (Plumbers Union site) two parcels: 3505/008 and 032 (2015-005848ENV)	The proposed project would demolish the existing UA Local 38 building (1621 Market Street), demolish the majority of the Lesser Brothers Building (1629–1645 Market Street), rehabilitate the Civic Center Hotel (1601 Market Street), and demolish the 242-space surface parking lots. In total, the project would construct five new buildings (ranging from four to 10 stories, 58 to 85-feet-tall). The project would include 477 market-rate residential units, 107 affordable supportive housing units. The project would also include the construction of 18,300-square-foot Brady Open Space at the northeast corner of Brady and Colton Streets. Within the new buildings there would be approximately 13,100 square feet of ground-floor retail/restaurant space.	Offsite Mitigated: 3.9 Onsite Mitigated: 6.3	Offsite Mitigated: 0.093 $\mu g/m^3$ Onsite Mitigated: 0.065 $\mu g/m^3$
2	1500 Mission Street (2014-000362ENV)	The project would demolish a 29,000 sf building and construct a mixed use development with 767,200 sf residential and retail/restaurant building. The project would include 560 dwelling units, 567,300 sf of office and a permit center.	Offsite Mitigated: 2.2 Onsite Resident Mitigated: 5.7 Onsite Child Mitigated: 1.4	Offsite Mitigated: 0.012 $\mu g/m^3$ Onsite Resident Mitigated: 0.010 $\mu g/m^3$ Onsite Child Mitigated: 0.0056 $\mu g/m^3$
6	10 South Van Ness Avenue (2015-004568ENV)	The project site is occupied by a two-story, 30- to 45-foot-tall building, and a small vacant lot. The project would demolish the existing building and construct a mixed-use residential building, with up to 984 residential units, retail space on the ground floor, and two below-grade levels for parking and loading activities (up to 518 vehicle parking spaces and seven freight loading spaces) accessed from a single curb cut and driveway on 12th Street.	Offsite Mitigated: 6.39 Onsite Mitigated: 2.43	Offsite Mitigated: 0.1 $\mu g/m^3$ Onsite Mitigated: 0.08 $\mu g/m^3$

Table 3.D-18, Cumulative (2040) + Hub Plan Cancer Risk at the Hub Plan Maximally Exposed Individual Sensitive Receptor, summarizes the cumulative cancer risk and **Table 3.D-19**, p. 3.D-100, Cumulative (2040) + Hub Plan $PM_{2.5}$ Concentration at the Hub Plan Maximally Exposed Individual Sensitive Receptor, summarizes the cumulative $PM_{2.5}$ concentration at the Hub Plan MEISR.

As shown in **Table 3.D-18,** under the unmitigated scenario, cumulative lifetime cancer risk at the maximally exposed sensitive receptor would be 303 in 1 million and as shown in **Table 3.D-19**, p. 3.D-100, the $PM_{2.5}$ concentration would be 9.5 $\mu g/m^3$. Because, under the unmitigated scenario, the cumulative lifetime cancer risk level of 90 in 1 million would be exceeded and because $PM_{2.5}$ levels would exceed 9.0 $\mu g/m^3$ within a health vulnerable zip code, the Hub Plan, in combination with existing background risks and cumulative development projects, would result in significant cumulative health risk impacts.

Hub Plan Contribution

The Hub Plan and subsequent development projects, including projects at 30 Van Ness Avenue and 98 Franklin Street, would emit TACs and $PM_{2.5}$ as a result of vehicle trips, stationary sources, and construction activities. The Cumulative (2040) + Hub Plan scenario evaluated the impact from the Hub Plan in conjunction with the anticipated cumulative growth under 2040 conditions.

For the unmitigated scenario, the maximum cancer risk attributable to the Hub Plan would be 217 in 1 million. The breakdown of individual sources contributing to the cancer risk would be:

- 30 Van Ness Avenue Project construction would contribute 201 in 1 million
- 98 Franklin Street Project construction would contribute 2.4 in 1 million
- Emergency generators at the 11 sites, including the two individual project sites, would contribute 13 in 1 million
- Hub Plan 2040 traffic would contribute 1.5 in 1 million

Additionally, for the unmitigated scenario, the maximum $PM_{2.5}$ concentration attributable to the Hub Plan would be 0.64 $\mu g/m^3$. The breakdown of individual sources contributing to the cancer risk would be as follows:

- 30 Van Ness Avenue Project construction would contribute 0.59 $\mu g/m^3$
- 98 Franklin Street Project construction would contribute 0.010 $\mu g/m^3$
- Emergency generators at the 11 sites, including the two individual project sites, would contribute 0.0077 $\mu g/m^3$
- Hub Plan 2040 traffic would contribute 0.0.028 $\mu g/m^3$

TABLE 3.D-18. CUMULATIVE (2040) + HUB PLAN CANCER RISK AT THE HUB PLAN MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

Emissions Source Category		Cancer Risk (per 1 million persons exposed) Unmitigated	Mitigated
Hub Plan Cancer Risk Contributions			
Construction of Hub Projects	30 Van Ness Avenue Project	201	0.26
	98 Franklin Street Project	2.4	1.7
Generators[1]		13	24
Hub Plan 2040 Traffic		1.5	2.1
Total Project or Hub Plan Contribution		217	28
Significance threshold for Hub Plan cancer risk contribution within an APEZ		7	7
Significant?		Yes	Yes
Cumulative (2040) No Hub Plan Cancer Risk Contributions			
Cumulative (2040) No Hub Plan Traffic		43	42
Rail Sources		0.80	0.85
Maritime Sources		37	35
Existing Stationary Sources		4.9	4.7
Total Cancer Risk at MEISR		303	111

Source: Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects*, San Francisco, California, July 10, 2019.

Note:

1. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are added to ground-level impacts from construction and traffic.

TABLE 3.D-19. CUMULATIVE (2040) + HUB PLAN $PM_{2.5}$ CONCENTRATION AT THE HUB PLAN MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

Emissions Source Category		$PM_{2.5}$ Concentration (μg/m³) Unmitigated	Mitigated
Hub Plan $PM_{2.5}$ Contributions			
Construction of Hub Projects	30 Van Ness Avenue Project	0.59	2.5E-05
	98 Franklin Street Project	0.010	5.4E-05
Generators[1]		0.0077	7.0E-04
Hub Plan 2040 Traffic		0.028	0.13
Total Project or Hub Plan Contribution		0.64	0.13
Significance threshold for Hub Plan $PM_{2.5}$ contribution within an APEZ		0.2	0.2
Significant?		**Yes**	**Yes**
Cumulative (2040) No Hub Plan $PM_{2.5}$ Contribution			
Cumulative (2040) No Hub Plan Traffic		0.9	2.4
Rail Sources		0.0015	0.0031
Maritime Sources		0.048	0.045
Existing Stationary Sources		0.049	0.029
Background Concentration[2]		7.8	7.8
Total $PM_{2.5}$ Concentration at MEISR		9.5	10.4

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.
2. The background $PM_{2.5}$ concentration is the average annual monitored $PM_{2.5}$ concentration from the air district's 16th and Arkansas Street monitoring station.

Given that cancer risk (under the unmitigated scenario[72]) from all Hub Plan sources would increase by as much as 217 in 1 million and $PM_{2.5}$ concentration would increase by up to 0.64 μg/m³ at individual receptor points, the Hub Plan would exceed the thresholds of seven in 1 million for cancer risk and 0.2 μg/m³ for $PM_{2.5}$ contribution. Therefore, the implementation of the Hub Plan and subsequent projects (inclusive of individual development projects at 30 Van Ness Avenue and 98 Franklin Street), would result in a considerable contribution to a significant cumulative impact related to exposure of sensitive receptors to substantial levels of toxic air contaminants.

72 The unmitigated scenario evaluated health risks associated with operation of Hub Plan–level generators without any controls and from construction equipment for the construction of the two individual projects at 30 Van Ness Avenue and 98 Franklin Streets operating without any control measures. For the unmitigated scenarios, generators and diesel-powered construction equipment were assumed to operate with fleet-average emission factors consistent with default assumptions in the California Emissions Estimator Model version 2016.3.2 (CalEEMod®).

Figure 3.D-3, p. 3.D-75, depicts the parcels within the Hub Plan area that currently meet APEZ criteria under existing conditions. Overlaid on this figure are parcels within the Hub Plan area that would meet APEZ criteria with the implementation of the Hub Plan and individual projects at 30 Van Ness Avenue and 98 Franklin Street under cumulative 2040 conditions.

Regulations discussed above under Impacts AQ-5 and AQ-7 would be applicable to subsequent projects implemented under the Hub Plan. Among those regulations is the requirement for subsequent projects to prepare a TDM plan, which would reduce vehicle emissions through TDM and other measures. Additionally, the planning code contains requirements applicable to individual development projects that would serve to reduce vehicle trips, compared to conditions without such requirements. Section 421 of the City's Environment Code mandates that larger employers provide transit, transit passes, or financial incentives for transit use (section 421), which also has the potential to reduce vehicle travel. Additionally, the San Francisco General Plan and the City Charter contain numerous policy directives aimed at reducing auto trips, not the least of which is the City's Transit First Policy (section 16.102 of the charter). However, the efficacy of these measures to reduce tailpipe emissions cannot be quantified because it is uncertain the degree to which these measures would reduce the number of vehicle trips. Furthermore, vehicle emissions themselves are regulated at the state and federal levels. Therefore, the Hub Plan would significantly affect both the geography and severity of health risks within the Hub Plan area under 2040 cumulative conditions, resulting in a considerable contribution to cumulative health risk impacts.

The proposed streetscape and street network improvements would be required to comply with the Clean Construction Ordinance, which would reduce construction-related diesel emissions by 89 to 95 percent, as discussed in Impact AQ-8. Compliance with the Clean Construction Ordinance would ensure that construction impacts from streetscape and street network improvements would be less than cumulatively considerable and therefore ***less than significant***.

Mitigation Measures

Implement Mitigation Measures M-AQ-4b, M-AQ-5c, M-AQ-7a, M-AQ-7b, M-AQ-7c, M-AQ-7d, and M-AQ-7e.

Significance after Mitigation

As described above in Impact AQ-7, subsequent development under the Hub Plan would result in construction activities that could expose sensitive receptors to substantial levels of fine particulate matter and TACs generated by construction equipment, particularly from diesel emissions. However, implementation of Mitigation Measure M-AQ-7d would require all projects within the APEZ and newly added APEZ lots identified in **Figure 3.D-3**, p. 3.D-75, to comply with Mitigation Measure M-AQ-4b, Requirement for Construction Emissions Minimization Plan for Projects That Would Not Meet Screening Levels or Would Exceed Criteria Air Pollutant Significance Thresholds or Required in Impact AQ-7. This would reduce construction diesel emissions by 89 to 95 percent. Furthermore all subsequent development projects that propose new sources of TACs, including diesel generators and fire pumps would be required to comply with M-AQ-5c, Requirements for Best Available Control Technology for Projects with Diesel Generators and Fire Pumps, M-AQ-7b, Requirement for Air Quality Analysis That Considers the Siting of Uses That Emit Particulate Matter ($PM_{2.5}$), Diesel Particulate Matter, or Other Toxic Air Contaminants, and M-AQ-7c, Measures to Include Land Use Buffers Around Active Loading Docks.

The effectiveness of the above mitigation measures were quantitatively evaluated. **Table 3.D-18** and **Table 3.D-19**, pp. 3.D-98 and 3.D-99, summarize the results from the mitigated scenario for cancer risk and $PM_{2.5}$ concentration, respectively. The mitigated scenarios were evaluated assuming mitigated construction equipment for construction of the 30 Van Ness Avenue Project (certain diesel-powered equipment was assumed to use non-diesel fuel or electricity). As shown in **Table 3.D-18**, p. 3.D-98, in the mitigated column, implementation of these mitigation measures would reduce Hub Plan's contribution to cancer risk levels at the MEISR to 28 per 1 million persons exposed, which would still be above the significance threshold of seven per 1 million persons exposed. Therefore, even with implementation of these mitigation measures, the Hub Plan's contribution under the 2040 cumulative conditions would be cumulatively considerable. It is noted that the Hub Plan's contribution could be higher than reported in **Table 3.D-18** and **Table 3.D-19,** pp. 3.D-98 and 3.D-99, because construction impacts from subsequent development projects cannot be reasonably factored into these numbers. Therefore, although **Table 3.D-19** p. 3.D-99, shows that the Hub Plan's contribution to $PM_{2.5}$ concentrations are 0.13 μg/m^3, which is below the significance threshold of 0.2 μg/m^3, because additional construction emissions are likely and given the uncertainty associated with timing, duration, and intensity of constructing subsequent development projects, it is possible that sensitive receptors could be exposed to construction emissions from multiple development projects occurring at the same time, which could result in an exceedance of the $PM_{2.5}$ threshold even with implementation of M-AQ-4b. Based on the above, $PM_{2.5}$ emissions and cancer risk impacts generated by development occurring pursuant to the Hub Plan under 2040 cumulative conditions would be cumulatively considerable and this impact would be ***significant and unavoidable with mitigation***.

Impact C-AQ-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions. (Less than Significant with Mitigation)

A cumulative health risk analysis was conducted for each of the individual projects at 30 Van Ness Avenue and 98 Franklin Streets. The cumulative analysis includes all of the same sources modeled under Impact C-AQ-1, but results are presented for the MEISR where each project would result in the maximum health risk impact. For the cumulative (2040) scenario at the 30 Van Ness Avenue Project and 98 Franklin Street Project MEISRs, the locations of the onsite and offsite

MEISRs would not change between the mitigated and unmitigated scenarios. However, the contribution of plan-level impacts at the MEISR would change between the mitigated and unmitigated scenarios once plan-level and project mitigation measures are taken into account. The MEISRs were determined by identifying the receptors with the maximum impact from all project-level sources in 2040.

As discussed above, under Impact C-AQ-1, the Hub Plan (including the individual projects), in combination with existing background risks and cumulative development projects, would result in significant cumulative health risk impacts for both cancer risk and $PM_{2.5}$ concentrations. This is because, under the unmitigated scenario, cumulative lifetime cancer risk at the maximally exposed sensitive receptor would be 303 in 1 million, and the $PM_{2.5}$ concentration would be 9.56 $\mu g/m^3$. Thus, the following impact discussions focus on *contributions* to this cumulative impact from individual development projects at 30 Van Ness Avenue and 98 Franklin Street.

30 Van Ness Avenue Project

The Cumulative (2040) + 30 Van Ness Avenue Project scenario analyzed the impacts from the 30 Van Ness Avenue Project combined with the impacts from the Cumulative (2040) with Hub Plan scenario. The cumulative (2040) + 30 Van Ness Avenue Project scenario included all of the emissions sources evaluated for the cumulative (2040) + Hub Plan scenario because the Hub Plan scenario also includes the individual projects at 30 Van Ness Avenue and 98 Franklin Street. However, as noted above, in order to determine each project's contribution to cumulative impacts, the cumulative analysis was conducted at each project's MEISR.

The cumulative (2040) with Hub Plan + 30 Van Ness Avenue Project scenario was evaluated for an unmitigated scenario and a mitigated scenario, as shown in **Tables 3.D-20** and **Table 3.D-21**, p. 3.D-105.

TABLE 3.D-20. CUMULATIVE (2040) CANCER RISK AT THE 30 VAN NESS AVENUE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	Cancer Risk (per 1 million persons exposed)			
	Offsite MEISR		Onsite MEISR	
Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
30 Van Ness Avenue Project Contributions				
30 Van Ness Avenue Project Construction[1]	201	4.4	--	--
30 Van Ness Avenue Project Generators[2]	0.90	0.12	21	2.9
30 Van Ness Avenue Project Traffic	0.026	0.026	0.030	0.030
Total Project Contribution	202	4.5	22	2.9
Cumulative (2040) Sources				
Cumulative (2040) No Hub Plan Traffic	43	43	45	45
Rail Sources	0.80	0.80	0.78	0.78
Maritime Sources	37	37	37	37
Existing Stationary Sources	4.9	4.9	4.7	4.7
2040 Hub Plan Generators[3]	11	1.5	9.2	1.2
2040 Hub Plan Traffic	1.5	1.5	1.8	1.8
98 Franklin Street Project Construction[4]	2.4	0.19	0	0
98 Franklin Street Project Operations	0.69	0.10	0.55	0.080
Total Cancer Risk at MEISR	303	93	120	93

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors are not exposed to construction emissions.
2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.
3. The 2040 plan traffic and generators reported in the cumulative (2040) sources do not include the contribution of the cancer risk associated with traffic and generators from the individual projects.
4. Because the 98 Franklin Street Project construction is expected to be complete before the 30 Van Ness Avenue Project, it is not expected that the 30 Van Ness Avenue Project's onsite residents would be exposed to health impacts from construction of the 98 Franklin Street Project.

TABLE 3.D-21. CUMULATIVE (2040) $PM_{2.5}$ CONCENTRATION AT THE 30 VAN NESS AVENUE MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	$PM_{2.5}$ Concentration (μg/m³)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
30 Van Ness Avenue Project Contributions				
30 Van Ness Avenue Project Construction[1]	0.59	0.020	--	--
30 Van Ness Avenue Project Generators[2]	0.0024	3.1E-04	0.029	0.0038
30 Van Ness Avenue Project Traffic	4.7E-04	4.7E-04	5.6E-04	5.6E-04
Total Project Contribution	0.60	0.021	0.029	0.0044
Cumulative (2040) Sources				
Cumulative (2040) No Hub Plan Traffic	0.94	0.94	1.1	1.1
Rail Sources	0.0015	0.0015	0.0015	0.0015
Maritime Sources	0.048	0.048	0.048	0.048
Existing Stationary Sources	0.049	0.049	0.048	0.048
Background Concentration[3]	7.8	7.8	7.8	7.8
2040 Hub Plan Generators[4]	0.0035	4.7E-04	0.0028	3.7E-04
2040 Hub Plan Traffic	0.027	0.027	0.033	0.033
98 Franklin Street Project Construction[5]	0.010	0.0011	0	0
98 Franklin Street Project Operations	0.0019	3.7E-04	8.8E-04	2.4E-04
Total $PM_{2.5}$ Concentration at MEISR	9.5	7.9	8.0	7.9

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors are not exposed to construction emissions.
2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.
3. The background $PM_{2.5}$ concentration is the average annual monitored $PM_{2.5}$ concentration from the air district's 16th and Arkansas Street monitoring station.
4. The 2040 plan traffic and generators reported in the cumulative (2040) sources do not include the traffic and generators from the two individual projects.
5. Because the 98 Franklin Street Project construction is expected to be complete before the 30 Van Ness Avenue Project, it is not expected that the 30 Van Ness Avenue Project's onsite residents would be exposed to health impacts from construction of the 98 Franklin Street Project.

The 30 Van Ness Avenue Project generator emissions and construction emissions would be the same as evaluated under Impact AQ-9. The operational traffic emissions from the 30 Van Ness Avenue Project were estimated using the same methodology as in the Baseline (2020) + 30 Van Ness Avenue Project scenario but using Hub Plan 2040 traffic instead of Hub Plan 2020 traffic as the basis for the proportional traffic emissions analysis used in the risk assessment.

Following the determination of the MEISR from Project-only impacts, the results from the Cumulative (2040) with Hub Plan scenario were added to understand the overall health risk impacts at each receptor.

Cancer Risk

For the offsite MEISR, the cancer risk contribution from construction and operation associated with 30 Van Ness Avenue for the unmitigated scenario[73] would be 202 in 1 million, as shown in the "Total Project Contribution" row of **Table 3.D-20,** p. 3.D-104. The breakdown of individual sources contributing to these health risks would be as follows:

- 30 Van Ness Avenue Project construction would contribute 201 in 1 million
- 30 Van Ness Avenue Project generators would contribute 0.90 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 0.026 in 1 million

For the onsite MEISR, which would not be exposed to the 30 Van Ness Avenue Project construction emissions, the cancer risk contribution from the unmitigated operation of 30 Van Ness Avenue would be 22 in 1 million, as shown in **Table 3.D-20,** p. 3.D-103. The breakdown of individual sources contributing to these health risks would be as follows:

- 30 Van Ness Avenue Project generators would contribute 21 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 0.030 in 1 million

As shown in the **Table 3.D-20,** p. 3.D-104, the project's contribution to cancer risk at onsite and offsite receptors would exceed the significance threshold of seven in 1 million persons exposed, resulting in a ***significant impact***.

Mitigation Measures

Implementation of Mitigation Measure M-AQ-9a: Requirement for Construction Emissions Minimization Plan for 30 Van Ness Avenue Project, and Mitigation Measure M-AQ-9b: Requirement for Best Available Control Technology for Diesel Generators for 30 Van Ness Avenue Project, discussed under Impact AQ-9, above, would be required to reduce the cancer risk.

Significance After Mitigation

As noted above in those discussions, generators with Tier 4 engines emit 75 to 85 percent fewer DPM and $PM_{2.5}$ emissions than Tier 2 engines, while emissions of diesel particulate matter can be

73 The unmitigated scenario was evaluated assuming no control measures for the diesel-powered construction equipment and generators. Fleet average emission factors consistent with default assumptions of CalEEMod® 2016.3.2 were used.

reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards.

Table 3.D-20, p. 3.D-104, summarizes the results from the mitigated scenarios for both offsite and onsite MEISRs, which were evaluated assuming generators and diesel-powered construction equipment would meet Tier 4 standards or equivalent. Additionally, the generators at the 30 Van Ness Avenue project site were assumed to operate for up to 20 permitted hours per year as part of this mitigation measure. For construction equipment, certain diesel-powered equipment was assumed to use non-diesel fuel (i.e., propane) or electricity. As shown in **Table 3.D-20,** p. 3.D-104, in the mitigated columns, implementation of these mitigation measures would reduce cancer risk contributions from the project at both offsite and onsite MEISRs to 4.5 and 2.9 per 1 million persons exposed, respectively. Therefore, because the mitigated cancer risk would be below seven per 1 million persons exposed, the cancer risk impact would be reduced to a ***less-than-significant*** level.

$PM_{2.5}$ Concentration

For the offsite MEISR, the maximum $PM_{2.5}$ concentration contribution from construction and operation for the uncontrolled scenario would be 0.60 μg/m^3, as shown in the "Total Project Contribution" row of **Table 3.D-21,** p. 3.D-105. The breakdown of individual sources contributing to these health risks would be as follows:

- 30 Van Ness Avenue Project construction would contribute 0.59 μg/m^3
- 30 Van Ness Avenue Project generators would contribute 0.0024 μg/m^3
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 0.00047 μg/m^3

For the onsite MEISR, which would not be exposed to the 30 Van Ness Avenue Project construction emissions, the $PM_{2.5}$ concentration contribution from unmitigated operation would be 0.029 μg/m^3, as shown in **Table 3.D-21,** p. 3.D-105. The breakdown of individual sources contributing to these health risks would be as follows:

- 30 Van Ness Avenue Project generators would contribute 0.029 μg/m^3 for
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 30 Van Ness Avenue Project would contribute 0.00056 μg/m^3

As shown in **Table 3.D-21,** p. 3.D-105, the project's contribution to $PM_{2.5}$ concentration at offsite receptors (only) would exceed the significance threshold of 0.2 μg/m, resulting in a ***significant impact***.

Mitigation Measures

Implementation of Mitigation Measures M-AQ-9a, Requirement for Construction Emissions Minimization Plan for 30 Van Ness Avenue Project, and M-AQ-9b, Requirement for Best

Available Control Technology for Diesel Generators for 30 Van Ness Avenue Project, discussed under Impact AQ-9, would be required to reduce the $PM_{2.5}$ concentration.

Significance After Mitigation

As shown in **Table 3.D-21,** p. 3.D-105, in the mitigated columns, implementation of these mitigation measures would reduce $PM_{2.5}$ levels at both offsite and onsite MEISRs to 0.021 $\mu g/m^3$ and 0.0044 $\mu g/m^3$, respectively. Therefore, because the mitigated cancer risk would be below the significance threshold of 0.2 μg/m, the $PM_{2.5}$ concentration impact would be reduced to a ***less-than-significant*** level.

98 Franklin Street Project

The cumulative (2040) + 98 Franklin Street Project scenario analyzed the impacts from the 98 Franklin Street Project combined with the impacts from the cumulative (2040) with Hub Plan scenario. The cumulative (2040) + 98 Franklin Street Project scenario included all of the emissions sources evaluated for the cumulative (2040) + Hub Plan scenario because the Hub Plan scenario also includes the individual projects at 30 Van Ness Avenue and 98 Franklin Street. However, as noted above, in order to determine each project's maximum contribution to cumulative impacts, the cumulative analysis was conducted at each project's MEISR.

The cumulative (2040) with Hub Plan + 98 Franklin Street Project scenario was evaluated for an unmitigated scenario and a mitigated scenario, as shown in **Tables 3.D-22** and **Table 3.D-23**, p. 3.D-110.

The 98 Franklin Street Project generator emissions and construction emissions are the same as evaluated under Impact AQ-9. The operational traffic emissions from the 98 Franklin Street Project are estimated using the same methodology as in the Baseline (2020) + 98 Franklin Street Project scenario but using Hub Plan 2040 traffic instead of Hub Plan 2020 traffic as the basis for the proportional traffic emissions analysis used in the risk assessment.

Following the determination of the MEISR from Project-only impacts, the results from the Cumulative (2040) with Hub Plan scenario were added to understand the overall health risk impacts at each receptor.

Cancer Risk

For the offsite MEISR, the cancer risk contribution from construction and operation associated with 98 Franklin Street for the unmitigated scenario[74] would be 72 in 1 million, as shown in the

---

74 The unmitigated scenario was evaluated assuming no control measures for the diesel-powered construction equipment and generators. Fleet average emission factors consistent with default assumptions of CalEEMod® 2016.3.2 were used.

"Total Project Contribution" row of **Table 3.D-22**. The breakdown of individual sources contributing to these health risks would be as follows:

- 98 Franklin Street Project construction would contribute 70 in 1 million
- 98 Franklin Street Project generators would contribute 1.6 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 0.063 in 1 million

TABLE 3.D-22. CUMULATIVE (2040) CANCER RISK AT THE 98 FRANKLIN STREET MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

	Cancer Risk (per 1 million persons exposed)			
	Offsite MEISR		Onsite MEISR	
Emissions Source Category	**Unmitigated**	**Mitigated**	**Unmitigated**	**Mitigated**
98 Franklin Street Project Contributions				
98 Franklin Street Project Construction[1]	70	5.6	--	--
98 Franklin Street Project Generators[2]	1.6	0.22	6.1	0.82
98 Franklin Street Project Traffic	0.0063	0.063	0.056	0.0056
Total Project Contribution	72	5.8	6.2	0.82
Cumulative (2040) Sources				
Cumulative (2040) No Hub Plan Traffic	40	40	41	41
Rail Sources	0.84	0.84	0.83	0.83
Maritime Sources	35	35	35	35
Existing Stationary Sources	4.3	4.3	4.1	4.1
2040 Hub Plan Generators 3	11	1.5	11	1.4
2040 Hub Plan Traffic 3	1.4	1.4	1.2	1.2
30 Van Ness Avenue Project Construction	7.4	0.16	0.63	0.018
30 Van Ness Avenue Project Operations	1.0	0.15	0.89	0.14
Total Cancer Risk at MEISR	173	89	100	84

Source: Ramboll US Corporation, *Air Quality Technical Report, Hub Plan and Individual Projects*, San Francisco, California, July 10, 2019.

Notes:

1. Onsite receptors are not exposed to construction emissions.
2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.
3. The 2040 plan traffic and generators reported in the cumulative (2040) sources do not include the traffic and generators from the two individual projects.

TABLE 3.D-23. CUMULATIVE (2040) $PM_{2.5}$ CONCENTRATION AT THE 98 FRANKLIN STREET MAXIMALLY EXPOSED INDIVIDUAL SENSITIVE RECEPTOR

Emissions Source Category	$PM_{2.5}$ Concentration (μg/m³)			
	Offsite MEISR		Onsite MEISR	
	Unmitigated	Mitigated	Unmitigated	Mitigated
98 Franklin Street Project Contributions				
98 Franklin Street Project Construction[1]	0.28	0.032	--	--
98 Franklin Street Project Generators[2]	0.0024	3.2E-04	0.0083	0.0011
98 Franklin Street Project Traffic	1.2E-04	1.2E-04	1.1E-04	1.1E-04
Total Project or Hub Plan Contribution	0.29	0.032	0.0084	0.0012
Cumulative (2040) Sources				
Cumulative (2040) No Hub Plan Traffic	0.89	0.89	0.94	0.94
Rail Sources	0.0016	0.0016	0.0016	0.0016
Maritime Sources	0.046	0.046	0.045	0.045
Existing Stationary Sources	0.044	0.044	0.043	0.043
Background Concentration[3]	7.8	7.8	7.8	7.8
2040 Hub Plan Generators 4	0.0076	0.0010	0.0051	6.9E-04
2040 Hub Plan Traffic 4	0.026	0.026	0.023	0.023
30 Van Ness Avenue Project Construction	0.022	7.5E-04	0.0089	5.3E-04
30 Van Ness Avenue Project Operations	0.0030	7.9E-04	0.0016	5.6E-04
Total $PM_{2.5}$ Concentration at MEISR	8.2	8.0	7.9	7.9

Source: Ramboll US Corporation, Air Quality Technical Report, Hub Plan and Individual Projects, San Francisco, California, [date].

1. Onsite receptors are not exposed to construction emissions.

2. Generator impacts were evaluated at varying elevations to capture the maximum impacts from generators located above ground. These results are conservatively added to ground level impacts from construction and traffic.

3. The background $PM_{2.5}$ concentration is the average annual monitored $PM_{2.5}$ concentration from the air district's 16th and Arkansas Street monitoring station.

4. The 2040 plan traffic and generators reported in the cumulative (2040) sources do not include the traffic and generators from the two individual projects.

For the onsite MEISR, which would not be exposed to the 98 Franklin Street Project construction emissions, the cancer risk contribution from the unmitigated operation would be 6.2 in 1 million, as shown in **Table 3.D-22**, p. 3.D-109. The breakdown of individual sources contributing to these health risks would be as follows:

- 98 Franklin Street Project generators would contribute 6.1 in 1 million
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 0.0056 in 1 million

As shown in **Table 3.D-22**, p. 3.D-109, the project's contribution to cancer risk at offsite receptors (only) would exceed the significance threshold of seven per 1 million persons exposed, resulting in a ***significant impact***.

Mitigation Measures

Implementation of Mitigation Measure M-AQ-9c, discussed under Impact AQ-9, and Mitigation Measure M-AQ-5c, discussed under Impact AQ-5, would be required to reduce the cancer risk.

Significance After Mitigation

As noted above in those discussions, generators with Tier 4 engines emit 75 to 85 percent fewer DPM and $PM_{2.5}$ emissions than Tier 2 engines, while emissions of diesel particulate matter can be reduced by 89 to 94 percent with Level 3 VDECS compared to equipment with engines meeting no emission standards.

Table 3.D-22, p. 3.D-109, summarizes the results from the mitigated scenarios for both offsite and onsite MEISRs, which were evaluated assuming generators and diesel-powered construction equipment would meet Tier 4 standards or equivalent. For construction equipment, certain diesel-powered equipment was assumed to use non-diesel fuel (i.e., propane) or electricity. As shown in **Table 3.D-22**, p. 3.D-109, in the mitigated columns, implementation of these mitigation measures would reduce the project's contribution to cancer risk levels at offsite MEISRs to 5.8 and 0.82 per 1 million persons exposed, respectively. Therefore, because the mitigated cancer risk would be below seven per 1 million persons exposed, the cancer risk impact would be reduced to a ***less-than-significant*** level.

$PM_{2.5}$ Concentration

For the offsite MEISR, the maximum $PM_{2.5}$ concentration contribution from construction and operation for the unmitigated scenario would be 0.29 $\mu g/m^3$, as shown in the "Total Project Contribution" row of **Table 3.D-23,** p. 3.D-110. The breakdown of individual sources contributing to these health risks would be as follows:

- 98 Franklin Street Project construction would contribute 0.28 $\mu g/m^3$
- 98 Franklin Street Project generators would contribute 0.0024 $\mu g/m^3$
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 0.000012 $\mu g/m^3$

For the onsite MEISR, which would not be exposed to the 98 Franklin Street Project construction emissions, the $PM_{2.5}$ concentration contribution from unmitigated operation would be 0.0084 μg/m^3, as shown in **Table 3.D-23,** p. 3.D-110**.** The breakdown of individual sources contributing to these health risks would be as follows:

- 98 Franklin Street Project generators would contribute 0.0083 μg/m^3 for
- The proportion of Hub Plan–generated traffic estimated to be the direct result of the 98 Franklin Street Project would contribute 0.00011 μg/m^3

As shown in **Table 3.D-23**, p. 3.D-110, the project's contribution to $PM_{2.5}$ concentrations at offsite receptors (only) would exceed the significance threshold of 0.2 μg/m, resulting in a ***significant impact***.

Mitigation Measures

Implementation of Mitigation Measure M-AQ-9c, discussed under Impact AQ-9, and Mitigation Measure M-AQ-5c, discussed under Impact AQ-5, would be required to reduce the $PM_{2.5}$ concentration.

Significance After Mitigation

As shown in **Table 3.D-23,** p. 3.D-110, in the mitigated columns, implementation of these mitigation measures would reduce the project's $PM_{2.5}$ contribution to both offsite and onsite MEISRs to 0.032 μg/m^3 and 0.0012 μg/m^3, respectively. Therefore, because the mitigated $PM_{2.5}$ concentration would be below the significance threshold of 0.2 μg/m, the $PM_{2.5}$ concentration impact would be reduced to a ***less-than-significant*** level.

3.E WIND

This section of the EIR analyzes potential wind impacts that could occur as a result of the Hub Plan,[1] the two individual development projects, the Hub Housing Sustainability District (HSD), and cumulative conditions. The analysis assesses the potential for implementation of the Hub Plan, two individual development projects, and Hub HSD to adversely affect existing wind patterns compared to existing conditions and under cumulative conditions. The section discusses the environmental setting, regulatory framework, environmental impacts, and mitigation measures for wind.

This section describes potential wind impacts on areas where people walk such as sidewalks and plazas, focusing on comfort and safety for people walking. Various wind-tunnel tests were conducted to generally define the wind environment for people walking that currently exists and would exist with implementation of the Hub Plan, two individual development projects, and Hub HSD. The plan-level and cumulative wind analyses in this section are based on the *Market/Octavia Hub Plan Pedestrian Wind Study,*[2] the *170 Otis Street Design Change Wind Memorandum,*[3] and the *Market/Octavia Hub Plan Memorandum*[4] prepared by Rowan Williams Davies & Irwin Inc. (RWDI). The project-level wind analyses are based on the *30 Van Ness Pedestrian Wind Study*[5] and the *30 Van Ness Avenue Design Change Wind Memorandum*[6] prepared by RWDI and the *98 Franklin Street Wind Microclimate Study*[7] and the *98 Franklin Street Wind Study Memorandum*[8] prepared by BMT. The wind studies are included as Appendix G-1 through G-7.

Issues related to the proposed project's physical environmental impacts, identified in response to the notice of preparation (NOP) (Appendix A), were considered in preparing this analysis. The City and County of San Francisco (City) received three NOP comments related to wind. Issues of concern included wind impacts on people walking and people biking and wind mitigation.

---

1 The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

2 RWDI, *Market/Octavia Hub Plan Pedestrian Wind Study,* final report, January 18, 2019.

3 RWDI, *170 Otis Street Design Change Wind Memorandum,* final memorandum, May 21, 2019.

4 RWDI, *Market/Octavia Hub Plan Memorandum*, final memorandum, June 3, 2019.

5 RWDI, *30 Van Ness Pedestrian Wind Study,* final report, March 12, 2019.

6 RWDI, *30 Van Ness Pedestrian-Level Wind Study – Comments on Design Change Memorandum,* final, June 26, 2019.

7 BMT, *98 Franklin Street Wind Microclimate Study,* final report, February 8, 2019.

8 BMT, *98 Franklin Street Wind Study Memorandum,* final memorandum, 2019.

ENVIRONMENTAL SETTING

SAN FRANCISCO'S EXISTING CLIMATE AND WIND ENVIRONMENT

Generally, winds in San Francisco originate on the Pacific Ocean and blow through the city in an easterly direction. Average wind speeds are highest in the summer and lowest in the winter However, the strongest peak winds occur during the winter. The highest average wind speeds occur during the mid-afternoon, and the lowest wind speeds occur during the morning. The winds that are most prevalent in San Francisco are those from the northwest, west-northwest, west, and west-southwest.

A building's exposure, massing, and orientation affect nearby ground-level wind accelerations. Exposure is a measure of the degree to which a building extends above surrounding structures into the wind stream. A building surrounded by taller structures is unlikely to cause adverse wind accelerations at ground level, while even a small building can cause wind acceleration if it is freestanding and exposed. Groups of structures tend to slow the winds near ground level because of the friction and drag of the structures themselves on the winds. Buildings that are much taller than the surrounding buildings intercept and redirect winds that might otherwise flow overhead and bring them down the vertical face of the building to ground level where they create ground-level wind and turbulence. These redirected winds can be relatively strong, as well as relatively turbulent, and incompatible with the intended uses of nearby ground-level spaces, depending on the level and type of use for people walking.

Massing affects how much wind a building intercepts and whether wind accelerations occur at ground level. In general, rectangular buildings (oriented perpendicular to the prevailing wind direction) have the greatest potential for wind acceleration, and buildings with a more curvilinear shape or setbacks have a lesser effect. Building orientation also affects the amount of wind a structure intercepts and the corresponding extent of wind acceleration. Buildings with a wide base or façade, perpendicular to prevailing winds, will generally cause greater ground-level wind acceleration. Moreover, structure designs that present tall, flat, rectangular surfaces that are square to strong winds can create strong ground-level winds. Conversely, a building with a height that is similar to the heights of surrounding buildings typically would cause little or no additional ground-level wind acceleration and turbulence. Thus, wind impacts are generally caused by large building masses that extend substantially above their surroundings and buildings that are oriented so that a large wall could catch a prevailing wind, particularly if such a wall includes little or no articulation.[9] In general, new buildings that are less than 80 feet in height are unlikely to result in substantial adverse effects on ground-level winds such that people walking would be uncomfortable. Such winds may occur under existing conditions, but shorter buildings typically do not cause substantial changes in ground-level winds.

---

[9] Building articulation refers to architectural design elements on a structure that contribute to the public streetscape.

The comfort of people walking varies under different conditions (e.g., variations in sun exposure, temperature, wind speed). Winds of up to 4 miles per hour (mph) have no noticeable effect on comfort for people walking. With velocities between 4 and 8 mph, wind is often noticeably felt on the face. Winds between 8 and 13 mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole, while winds between 13 and 19 mph will raise loose paper, dust, and dry soil, and disarrange hair. For wind velocities between 19 and 26 mph, the force of the wind will noticeably push against the body. At 26 to 34 mph, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and the wind noise is unpleasant. Winds of more than 34 mph can result in loss of balance, and gusts can blow people over.

Wind Patterns in the Hub Plan Area Vicinity

Prior experience with wind testing in the area indicates that the Hub Plan area is subject to patterns of strong winds. Both the upwind topography and the nearby buildings strongly influence wind conditions within the Hub Plan area. The wind patterns south of Market Street are strongly affected by the west, west-northwest, and northwest winds that approach over the street and building grid that exists north of Market Street. There, westerly winds, which are the most frequent and relatively strongest, align with and are channeled into the east/west-oriented streets north of Market Street and approach Market Street relatively unimpeded at the level of people walking. Similarly, the west-northwesterly winds are also channeled into the east/west-oriented streets, but their speeds tend to be reduced due to their greater misalignment with the street grid. However, both the west and the west-northwest winds, which, in combination, account for nearly half of the city's winds, contribute to the strong winds that flow along the east/west-oriented streets.

Northwest winds are impeded at the street level north of Market Street, due to their misalignment with the street grid, which is oriented nearly north/south and east/west; however, these winds continue to flow toward the Hub Plan area. Southwest winds are similarly impeded at street level; they also continue to flow above street level. Both northwest winds and southwest winds also contribute to winds along the east/west-oriented streets.

The street grid south of Market Street is offset from the north of Market Street grid by approximately 45 degrees. As a result, winds from the north and west either encounter the street wall (i.e., buildings) that redirects them along Market Street, or they encounter an intersection with streets perpendicular to Market Street (i.e., the numbered streets) that lead into the Hub Plan area. In the latter case, the wind flow divides, with some wind flowing along the northwest/southeast street and some wind flowing along Market Street.[10]

---

[10] San Francisco convention, followed in this EIR, is to describe South of Market streets that are parallel to Market Street as east/west streets and streets perpendicular to Market Street as north/south streets. However, in discussing wind directions, true compass directions are used for clarity.

Wind flows along each of the northwest/southeast streets of the Hub Plan area are also directly generated by the northwest winds, which align with the grid south of Market Street and which can be brought to ground level and channeled into the northwest/southeast streets. Although misaligned with the street grid north of Market Street and diminished by passing through that area, the northwest winds are important in the Hub Plan area because they strike the faces of buildings on streets parallel to Market Street head-on and are redirected to the level of people walking by those buildings. Southwest winds also align with the Hub Plan area street grid, strike the faces of numbered-street buildings head-on, are redirected down to the level of people walking, and are channeled into southwest/northeast streets.

Unlike the northwest winds, southwest winds approach the Hub Plan area relatively unimpeded by similar parallel blocks of low-rise buildings (mostly two to four stories and no more than about 50 feet in height). While the relatively frequent west and west-northwest winds are not aligned with the grid and their speeds are therefore reduced, they can be brought down to the level of people walking by encountering taller buildings or by passing over vacant parcels of land. By both of these mechanisms, these winds directly and substantially contribute to winds at the level of people walking in the Hub Plan area.

Regulatory Framework

Planning Code Section 148

San Francisco Planning Code section 148, Reduction of Ground-level Wind Currents in Downtown Commercial (C-3) Districts, specifically outlines wind reduction criteria for the C-3 District. Although some portions of the Hub Plan area are not located in a C-3 District,[11] the city uses the wind hazard criteria from planning code section 148 to evaluate the significance of wind impacts from all proposed projects for the purposes of the California Environmental Quality Act (CEQA). The wind studies prepared for the Hub Plan, two individual development projects (both of which are in a C-3 District), and Hub HSD were performed using wind testing analysis and evaluation methods to determine conformity with section 148 criteria.

The planning code establishes defined wind hazard and wind comfort criteria. The hazard criterion of 26 mph is based on winds that are measured for one hour and averaged. However, the wind speeds reported directly from available meteorological data have much shorter averaging periods, about one minute; therefore, the speed must be adjusted to correct for the difference between the one-hour and the one-minute averaging time. When adjusted to a one-minute averaging period, the hazard criterion speed is a one-minute average of 36 mph. The planning code defines these wind speeds in terms of “equivalent wind speeds” and

[11] Although some portions of the Hub Plan area are currently not located in the C-3 District, the Hub Plan would change all parcels to C-3, with the exception of some Public (P) parcels that would remain.

"average wind speed" (mean velocity), adjusted to include the level of gustiness and turbulence. The hazard criterion requires that the development not cause equivalent wind speeds[12] to exceed the hazard level of 26 mph, as averaged for a single full hour of the year.

The comfort criterion are based on wind speeds that are measured for one minute and averaged. The comfort criterion state that wind speeds will not exceed 11 mph in substantial use areas where people walk and 7 mph in public seating areas more than 10 percent of the time year-around between 7 a.m. and 6 p.m.[13]

When pre-existing ambient wind speeds exceed the comfort level, or when a proposed building or addition may cause ambient wind speeds to exceed the comfort level, the building shall be designed to reduce the ambient wind speeds to meet the requirements. An exception may be granted, in accordance with the provisions of section 309, allowing the building or addition to add to the amount of time that the comfort level is exceeded by the least practical amount if (1) it can be shown that a building or addition cannot be shaped and other wind-baffling measures cannot be adopted to meet the foregoing requirements without creating an unattractive and ungainly building form and without unduly restricting the development potential of the building site in question, and (2) it is concluded that, because of the limited amount by which the comfort level is exceeded, the limited location in which the comfort level is exceeded, or the limited time during which the comfort level is exceeded, the addition is insubstantial. No exception shall be granted and no building or addition shall be permitted that causes equivalent wind speeds to reach or exceed the hazard level of 26 miles per hour for a single hour of the year.

IMPACTS AND MITIGATION MEASURES

This section describes the impact analysis for the Hub Plan, the 30 Van Ness Avenue Project, and the 98 Franklin Street Project related to wind. It describes the methods used to determine the impacts of all of the project's components and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

---

[12] The equivalent wind speeds were calculated according to the specifications in section 148, whereby the mean hourly wind speed is increased when the turbulence intensity is greater than 15 percent, according to the following formula:

where EWS = equivalent wind speed
V_m = mean pedestrian-level wind speed
TI = turbulence intensity

[13] The wind comfort criterion are defined in terms of equivalent wind speed, which is the average wind speed (mean velocity) adjusted to include the level of gustiness and turbulence. Equivalent wind speed is defined as mean wind velocity multiplied by quantity (one plus three times the turbulence intensity) divided by 1.45. This calculation magnifies the reported wind speed when turbulence intensity is greater than 15 percent.

Implementation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the city to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing city laws and regulations but would not require additional CEQA analysis. Because the Hub HSD would be a procedural change that would be shown as an overlay on zoning maps, no impacts would result from implementation of the HSD beyond those already identified for the Hub Plan, and this project component is not discussed further.

Significance Criteria

The following significance criterion is from Appendix B of the San Francisco Planning Department's (department) Environmental Review Guidelines (which is the department's Initial Study Checklist) and is used to determine the level of impact related to wind. For the purposes of this EIR, implementation of the Hub Plan and two individual development projects would have a significant effect with respect to the wind environment where people walk if it would:

- Create wind hazards in publicly accessible areas of substantial pedestrian use.

To assess whether a project would result in a significant impact under the CEQA significance criterion, the city uses the planning code's hazard criterion. That is, the city determines whether a project would cause equivalent wind speeds to reach or exceed the wind hazard criterion of 26 mph for a single hour of the year. If a project would cause a new wind hazard or exacerbate an existing wind hazard in a public area, it may result in a significant impact under CEQA. The department does not consider exceedances of the comfort criterion to be a significant impact for CEQA purposes. However, the wind studies assessed wind conditions related to the comfort criterion and the results of this assessment are summarized for informational purposes.

Approach to Analysis

Three separate primary studies were prepared for purpose of this analysis, *The Pedestrian Wind Study for the Hub Plan* (prepared by RWDI), the 30 Van Ness Pedestrian Wind Study (prepared by RWDI), and the 98 Franklin Street Wind Study Memorandum (prepared by BMT). In addition, RWDI prepared a memorandum that discusses potential wind impacts associated with buildings under 85 feet in height in the Hub Plan area. For the two individual projects that will be seeking project-level environmental clearance through this EIR (30 Van Ness Avenue and 98 Franklin Street), wind analyses for the modeled buildings were based on current plans from the time when the analyses were performed. For all other projects in the Hub Plan area, RWDI and BMT used assumptions outlined in a memorandum from the department.[14]

Following completion of the pedestrian wind study for the 30 Van Ness Avenue Project, a change to the building design was proposed that resulted in a shift of the proposed tower while maintaining the previously studied podium design. The 30 Van Ness Avenue Design Change Wind Memorandum[15] confirmed that no conclusions reached in the 30 Van Ness Pedestrian Wind Study would change as a result of the shifting of the tower. Following completion of the pedestrian wind study for the 98 Franklin Street Project, a change to the building design was proposed that resulted in a slight height increase of approximately 5 feet and slight shifting of the proposed tower. The 98 Franklin Street Wind Study Memorandum[16] confirmed that no conclusions reached in the 98 Franklin Street Wind Microclimate Study would change as a result of the change in height or shifting of the tower.

The results of the various wind-tunnel tests for the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street Project are discussed in the Impact Evaluation below. These tests were performed to define the wind environment following implementation of the Hub Plan and the two individual development projects (mainly sidewalks and open spaces throughout the Hub Plan area) on areas where people would walk. The wind environment under the Hub Plan and the two individual development projects is discussed separately. Plan-level testing took a consistent approach across the district using rough massing, whereas project-level tests incorporated architectural detail. However, for both the plan-level and the project-level tests, wind comfort and wind hazards were analyzed.[17] In addition, each wind-tunnel test included existing wind comfort and wind hazard conditions, as discussed in more detail below. However, the results for each are slightly different because of varying assumptions and other factors. The wind-tunnel tests, as presented below, were conducted by different consultants using different sensors at different scales. Therefore, the existing conditions results vary slightly, but not by an amount that would render the analysis and conclusions unreliable.

---

[14] San Francisco Planning Department. August 7, 2018—memo to Erin Efner, ICF, "Wind Analysis Massing Assumptions in the EIR for the Hub Plan, Van Ness Avenue Project, 98 Franklin Street Project, and the Hub Housing Sustainability District." Included in Appendix G-1.A of this document.

[15] RWDI, *30 Van Ness Pedestrian-Level Wind Study – Comments on Design Change Memorandum,* final, June 26, 2019.

[16] BMT, *98 Franklin Street Wind Study Memorandum,* final, 2019.

[17] Bicycle lane locations around the Hub Plan area were also analyzed for informational purposes, but are not included in the EIR analysis below. An analysis of bicycle lane locations can be found in Appendix G-1 and is included as part of a separate technical background study in the administrative record for this project.

PROPOSED STREETSCAPE AND STREET NETWORK IMPROVEMENTS

The streetscape and street network improvements would be implemented entirely within existing public rights-of-way and would not involve construction of any buildings or other structures of a height or bulk great enough to result in adverse effects related to wind. As disclosed in the initial study (see Appendix B), the proposed streetscape and street network changes were found not to affect wind conditions in a substantial manner. Because wind impacts related to streetscape and street network changes would be less than significant, no further analysis is required.

HUB PLAN

The Pedestrian Wind Study for the Hub Plan was prepared by RWDI (Appendix G-1). The analysis of the wind effects of the Hub Plan were performed using the wind testing analysis and evaluation methods that are used for section 148. The purpose of the study was to assess the wind environment around the Hub Plan area in terms of comfort and safety for people walking. This quantitative assessment was based on wind speed measurements on a 1:400 scale model of the Hub Plan area and its surroundings in a boundary-layer wind tunnel. The following configurations were tested:

- **Existing:** Existing site with existing surroundings, including buildings that were under construction as of May 2018, with Van Ness Avenue Bus Rapid Transit (BRT) trees and station structures and existing landscaping included along Van Ness Avenue in the Hub Plan area. In particular, existing landscaping assumed in the model included trees between Franklin Street and Van Ness Avenue on the north side of Market Street, trees in the median of Mission Street at the west corner of the South Van Ness Avenue/Mission Street/Otis Street intersection, two trees in the median of South Van Ness Avenue between Market Street and Mission Street, trees in the median of Van Ness Avenue between a point just north of Grove Street and Mission Street, and trees along the Franklin Street frontage of the 98 Franklin Street site. Landscaping has been included in all configurations to better represent the true wind conditions of the tested areas. Existing conditions for the Hub Plan are discussed in Impact WI-1.
- **Existing plus Hub Plan:** "Existing" configuration with subsequent development that is anticipated to occur with the Hub Plan over time.[18] Specifically, the following study buildings are included and analyzed in Impact WI-1:

[18] Proposed trees assumed to be deciduous at five to 10 years of growth and 10 to 15 feet canopy.

- *Drawings on file, based on project applications:* 30 Van Ness Avenue[19] (including proposed landscaping in front of 30 Van Ness Avenue and wind canopy), 98 Franklin Street, and 10 South Van Ness Avenue (590-foot single tower).
- *Massing provided by department design team:* 1 South Van Ness Avenue.
- *Massing, based on submitted plans but with style and height proposed under the Hub Plan:* 1500–1540 Market Street (One Oak) (450 feet), 42 Otis Street (65 feet), and 30 Otis (320 feet).
- *Full site boundary, extrapolated to full maximum height proposed under the Hub Plan:* 50 Otis Street, 99 South Van Ness Avenue, 33 Gough Street, 110 12th Street, 180 12th Street, 194 12th Street, 154 South Van Ness Avenue, 160 South Van Ness Avenue, 170 South Van Ness Avenue, and 1695 Mission Street Avenue, and 170 Otis Street.[20,21]

● **Cumulative:** Existing plus Hub Plan plus all cumulative buildings.[22] This configuration is also analyzed in Impact C-WI-1.[23]

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 3,200-foot radius of the Hub Plan area. The boundary-layer wind conditions beyond the modeled area were also simulated in RWDI’s wind tunnel. The wind tunnel model was instrumented with 160 wind speed sensors to measure mean[24] and gust wind speeds at a full-

---

19 Since completion of the *Market/Octavia Hub Plan Pedestrian Wind Study*, the 30 Van Ness Avenue Project has been redesigned to shift the proposed tower 6 feet to the south, while maintaining the podium design as was previously studied. Given that the other design features remain the same from a massing perspective, this change is considered minor with respect to impacts on wind comfort and hazard conditions at grade level. Therefore, although the *Market/Octavia Hub Plan Pedestrian Wind Study* is based on a slightly different building design, the conclusions in the study would not change.

20 Upon completion of wind tunnel testing, an additional site was added to the Hub Plan: 170 Otis Street. Wind conditions around 170 Otis Street are not expected to be affected by the proposed changes to the 170 Otis Street massing as described. Therefore, there would not be any new or additional exceedance locations as a result of the 170 Otis Street massing.

21 RWDI, *170 Otis Street Design Change Wind Memorandum,* final, May 21, 2019.

22 Note that the Hub Plan wind study analyzes two cumulative scenarios: Cumulative 1 and Cumulative 2. The cumulative analysis presented in this section is the Cumulative 1 Scenario, which assumes a 590-foot-tall single-tower project at 10 South Van Ness Avenue. For an analysis of the Cumulative 2 Scenario, please refer to Appendix G-1.

23 As stated above, since completion of the *Market/Octavia Hub Plan Pedestrian Wind Study*, the 30 Van Ness Avenue Project has been redesigned. However, although the *Market/Octavia Hub Plan Pedestrian Wind Study* is based on a slightly different building design, the conclusions in the study for the cumulative scenario would not change.

24 Although there are 163 numbered test locations, only 160 are included here since sensors 60, 61, and 62 are not currently active.

scale height of approximately 5 feet. The placement of wind measurement locations was based on experience and understanding of the usage of where people walk for the Hub Plan area, and was reviewed by the department. These measurements were recorded for 16 equally incremented wind directions. The department provided guidance throughout the process and conducted review of the analysis, which complies with standard methodology for studies in the city.

Wind statistics recorded at the San Francisco Federal Building between 1945 and 1951 (at a height of 132 feet) were analyzed as a reference for local climate and describe the speed, direction, and frequency of occurrence of winds. Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared against the wind comfort and hazard criteria as stated in planning code section 148.

The threshold wind speeds in the planning code were established by assuming wind speeds were averaged for one hour, while the local wind data available from the old San Francisco Federal Building at 50 United Nations Plaza were recorded for one minute on each hour. Therefore, an equivalent wind speed of 36 mph (based on the assumed one-hour averaged meteorological data) is commonly used in San Francisco for the assessment of hazard winds. The wind tunnel test results presented in the Hub Plan wind study use the one-minute average of 36 mph as the wind hazard criterion.

Buildings in the surrounding area that are under construction and/or have been approved were modeled in accordance with the information received in August 2018 from the department. Buildings within the study radius that are currently under construction were included in all test configurations (i.e., existing conditions). Anticipated future buildings that had been approved but had not begun construction as of May 2018 were included in the Cumulative configurations. A list of these sites is included in Appendix G-1.

30 Van Ness Avenue Project

The 30 Van Ness Pedestrian Wind Study was prepared by RWDI (Appendix G-4). The purpose of the 30 Van Ness Avenue Wind Study is to assess the probability of the 30 Van Ness Avenue Project to cause local wind speeds to exceed comfort and hazard criteria at publicly accessible points in the project vicinity. The evaluation of wind comfort and hazards was carried out by testing a 1:400 scale model of the project site and surroundings in accordance with standard city test protocols. A total of 181 wind speed sensors have been selected on project-area sidewalks and sidewalk corners within a 3,200-foot (0.6-mile) radius of the project vicinity in order to measure and then compare wind conditions for the following test scenarios:[25]

[25] The cumulative analysis with future developments around the 30 Van Ness Avenue project site was run as part of *The Pedestrian Wind Study for the Hub Plan* by RWDI, as discussed above.

- **Existing Scenario:** All existing buildings on the site and in the surroundings, including buildings/developments under construction. The assumptions used for the Existing Scenario are consistent with those described above for the Hub Plan, including all existing landscaping assumptions.
- **Existing plus 30 Van Ness Avenue Project Scenario:** The proposed 30 Van Ness Avenue Project with surrounding buildings/developments that are existing and under construction.[26]

The boundary-layer wind conditions beyond the modeled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 181 wind speed sensors to measure mean and gust wind speeds at a full-scale height of approximately 5 feet. The wind measurement locations for the 30 Van Ness Avenue Project are the same as the ones used for the Hub Plan wind study. The placement of wind measurement locations for the site was based on RWDI's experience and understanding of usage in areas where people walk and reviewed and approved by the department. The measurement data were generated for 16 equally incremented wind directions (in increments of 22.5 degrees). The department provided guidance throughout the process and conducted a review of the analysis, which complies with standard methodology for studies in the city.

98 FRANKLIN STREET PROJECT

The 98 Franklin Street Wind Microclimate Study and the 98 Franklin Street Wind Study Memorandum were prepared by BMT (Appendix G-6 and G-7).[27, 28] The purpose of the 98 Franklin Street Wind Study is to assess the probability of the 98 Franklin Street Project to cause local wind speeds to exceed comfort and hazard criteria at publicly accessible points in the project vicinity. The evaluation of wind comfort and hazards was carried out by testing a 1:300 scale model of the project in a boundary layer wind tunnel in accordance with standard city test protocols. A total of 85 city-approved, publicly accessible, ground-level locations ("test points") have been selected on project-area sidewalks and sidewalk corners within a 1,500-foot radius of the project vicinity in order to measure and then compare wind conditions for the following test scenarios:[29]

---

[26] Since completion of the *30 Van Ness Pedestrian Wind Study*, the 30 Van Ness Avenue Project has been redesigned to shift the proposed tower 6 feet to the south, while maintaining the podium design as was previously studied. Given that the other design features remain the same from a massing perspective, this change is considered minor with respect to impacts on wind conditions at grade level. Therefore, although the *30 Van Ness Pedestrian Wind Study* is based on a slightly different building design, the conclusions in the study would not change.

[27] BMT, *98 Franklin Street Wind Microclimate Study*, final report, February 8, 2019.

[28] BMT, *98 Franklin Street Wind Study Memorandum*, final, 2019.

[29] The cumulative analysis with future developments around the 98 Franklin Street project site was run as part of *The Pedestrian Wind Study for the Hub Plan* by RWDI, as discussed above.

- **Existing Scenario:** all existing buildings in the surroundings including buildings/ developments under construction
- **Existing plus 98 Franklin Street Project Scenario:**[30] The project was added to the Existing Scenario. Included as part of the project are evergreen trees along Franklin Street and along Oak Street, replacement of four trees at the north side along Oak Street with evergreen trees, and implementation of a canopy along the western façade of the project (along Franklin Street) to examine the changes to ground-level wind speed.

Measurements were taken for 16 wind directions in increments of 22.5 degrees (0 degrees represent the compass north). A subset of 85 test points from the Hub Plan wind study are included in this wind tunnel test for all scenarios. The test points were selected within a 1,500-foot radius of the project site. The test points were positions in key locations within the study area, which are the areas of use by people walking, including the locations on the sidewalks, street intersections, and open spaces. These test points have potential changes in wind speed and turbulence levels within the development areas of the project.

The locations of the test points are distributed amongst study area streets. Additionally, a total of 58 test points specific to the 98 Franklin Street Project within a reduced coverage (approximately 700-foot radius of the project site) were selected to assess a more typical project-specific scenario. The test point locations are the same for the Existing Scenario and the Existing plus 98 Franklin Street Project Scenario. The department provided guidance throughout the process and conducted a review of the analysis, which complies with standard methodology for studies in the city.

Density Bonus Programs

As discussed in Chapter 2, Project Description, the state density bonus program, as well as the City’s Affordable Housing Bonus Program (codified in planning code section 206), would be applicable in the Hub Plan area. This would result in the potential for added height for affordable housing projects. However, the locations where project sponsors might use the state or local density bonus programs are not known. Although these bonus programs permit an increase in residential density beyond that otherwise allowed, and enable project sponsors to request waivers or modifications with respect to planning code requirements, including height limits, they do not exempt subsequent projects from being subject to CEQA review. Therefore, pursuant to state density bonus law, any project for which additional height is requested would be evaluated further under CEQA.

---

[30] Note that the 98 Franklin Street Wind Study includes the Existing plus 98 Franklin Street Project Scenario and the Existing plus 98 Franklin Street Project with Mitigation Scenario. As a result of the findings in the wind study, the proposed measures to reduce wind impacts are now included as part of the 98 Franklin Street Project. Therefore, only one 98 Franklin Street Project Scenario is analyzed in this section.

IMPACT EVALUATION

Impact WI-1: The Hub Plan could create wind hazards in publicly accessible areas with substantial pedestrian use. (Less than Significant with Mitigation)

WIND COMFORT

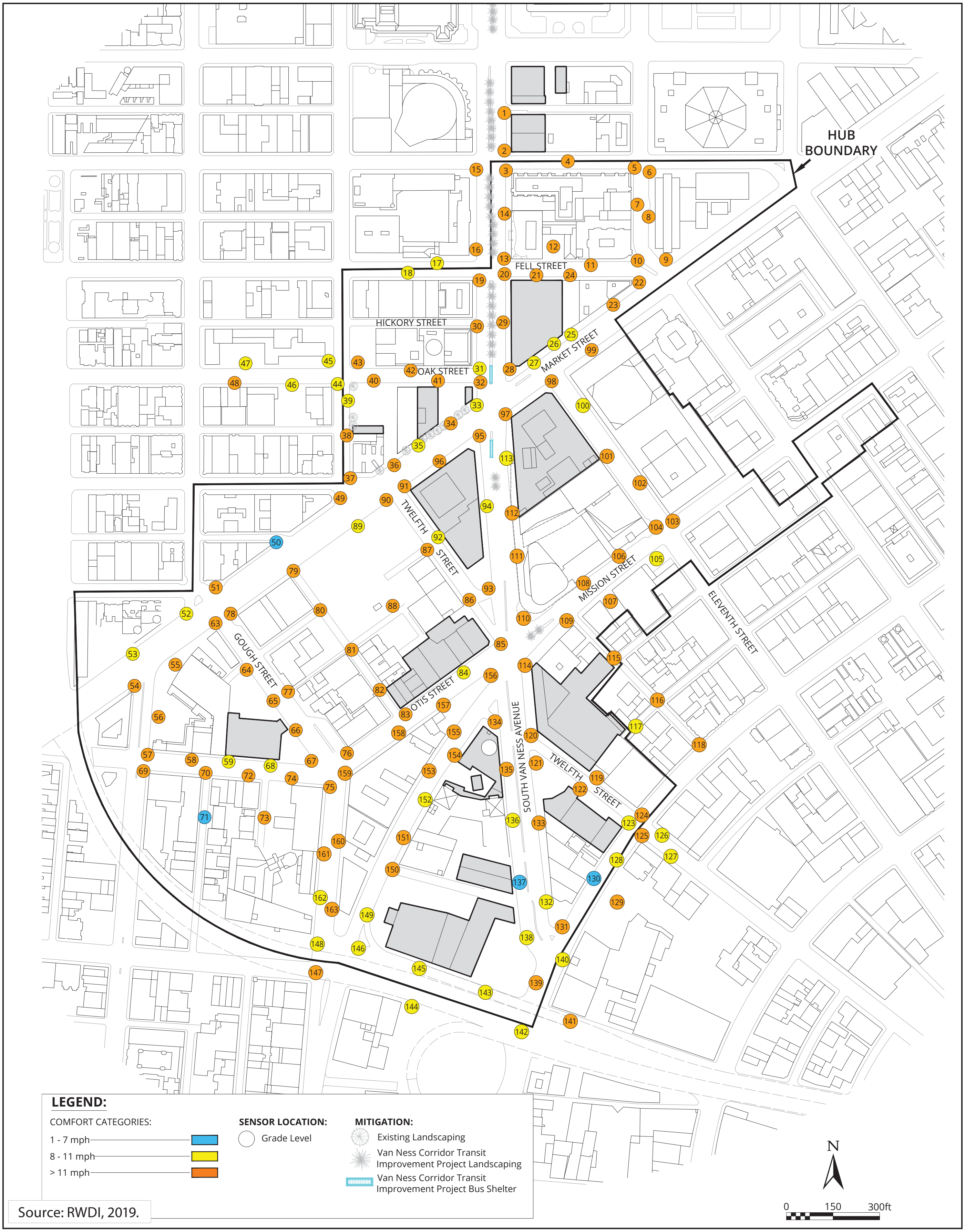
Table 3.E-1 provides a summary of the averages and total wind comfort exceedances for all 160 measurement locations. The results of the wind comfort conditions for all measurement locations are included in Appendix G-1. For each measurement point, the measured 10 percent exceeded (90th percentile) equivalent wind speed and the percentage of time that the wind speed exceeds 11 mph are listed. The point is marked as a comfort exceedance if the 11 mph threshold is exceeded. According to the San Francisco wind comfort criterion, locations with wind speeds that exceed 11 mph are considered uncomfortable for any use. Locations with wind speeds between 7 to 11 mph are comfortable for sidewalks. Locations with wind speeds lower than 7 mph are suitable for any area including entrances, seating areas, and bus stops. **Figure 3.E-1** depicts the existing wind comfort conditions for people walking.

TABLE 3.E-1. THE HUB PLAN WIND COMFORT CONDITIONS

Existing			Existing plus Hub Plan			
Average Wind Speed Exceeded 10% of Time (mph)	Average % of Time Wind Speed Exceeds 11 Miles per Hour (%)	Exceedances	Average Wind Speed Exceeded 10% of Time (mph)	Average % of Time Wind Speed Exceeds 11 Miles per Hour (%)	Speed Change Relative to Existing (mph)	Exceedances
14	21	114	15	25	1	125
Source: RWDI, 2019						

For the existing configuration, the average 90th percentile wind speed for the 160 test locations is approximately 14 mph. Wind speeds at 114 of 160 test locations exceed the planning code's comfort criterion of 11 mph for people walking. Winds currently exceed the applicable criterion 21 percent of the time (**Table 3.E-1** and **Figure 3.E-1**).

Compared to the existing configuration, the addition of the Hub Plan would result in similar wind comfort conditions in the Hub Plan area. The average 90th percentile wind speed for 160 test locations would be 15 mph, an increase of 1 mph over existing conditions. Wind speeds at 125 test locations (**Figure 3.E-2**, p. 3.E-15) would exceed the planning code's comfort criterion of 11 mph for people walking. However, the Hub Plan would eliminate existing wind comfort exceedances at 12 locations; therefore, the Hub Plan would result in a net increase at 11 test locations compared



Source: RWDI, 2019.

Figure 3.E-1
Existing Pedestrian Wind Comfort Conditions (Hub Plan)

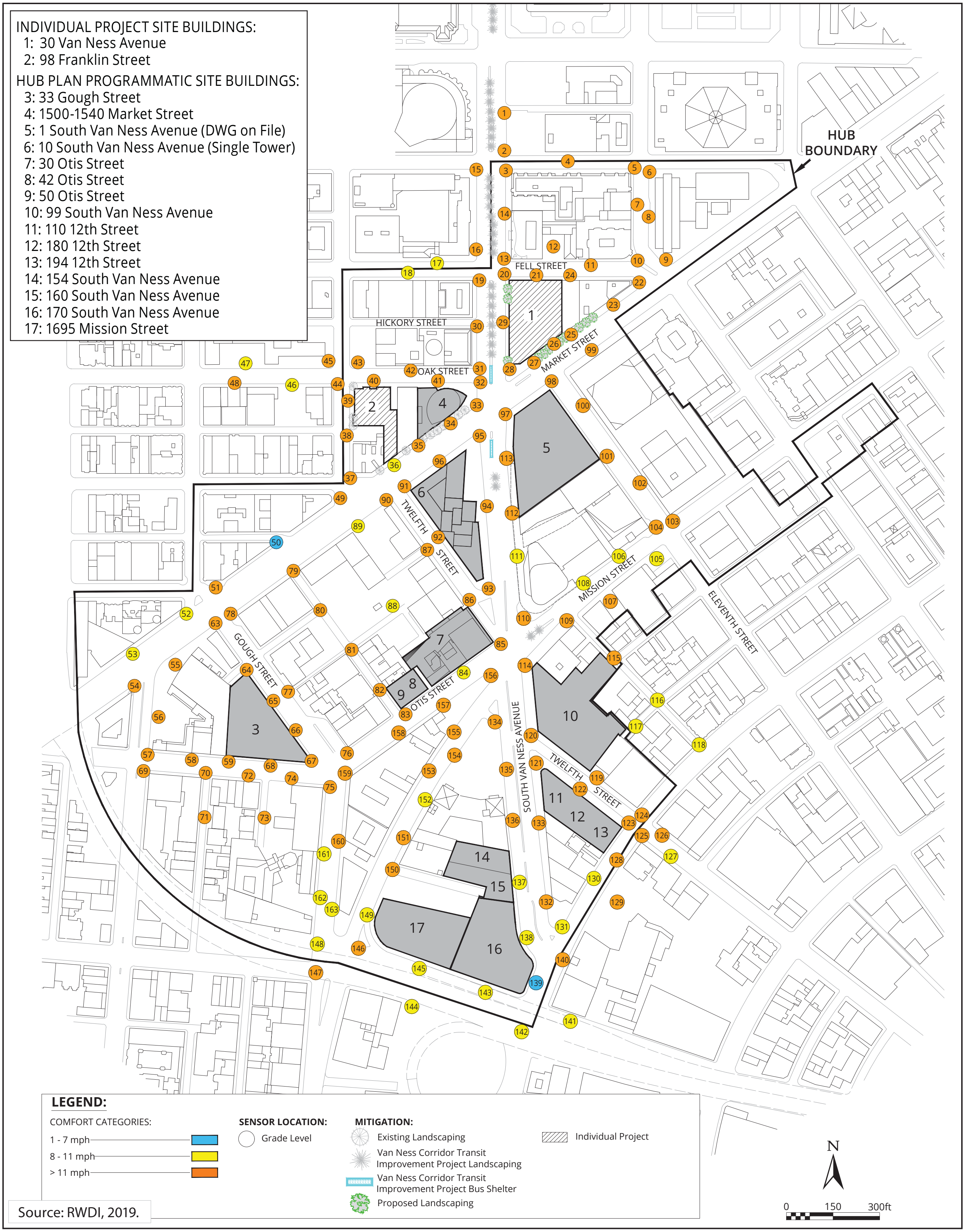


Figure 3.E-2
Existing + Hub Plan Pedestrian Wind Comfort Conditions

to existing conditions. Winds would exceed the 11 mph criterion approximately 25 percent of the time, representing a 4 percent increase compared to existing conditions. The wind conditions at Location 10 would not be affected by the addition of Hub Plan buildings.

WIND HAZARD

Table 3.E-2 provides a summary of the averages and total wind hazard exceedances for all 160 measurement locations. The predicted number of hours per year that the section 148 wind hazard criterion (one-minute wind speed of 36 mph) would be exceeded is also provided. **Figure 3.E-3** depicts the existing wind hazard conditions for people walking. The results of the wind hazard conditions for all measurement locations are included in Appendix G-1.

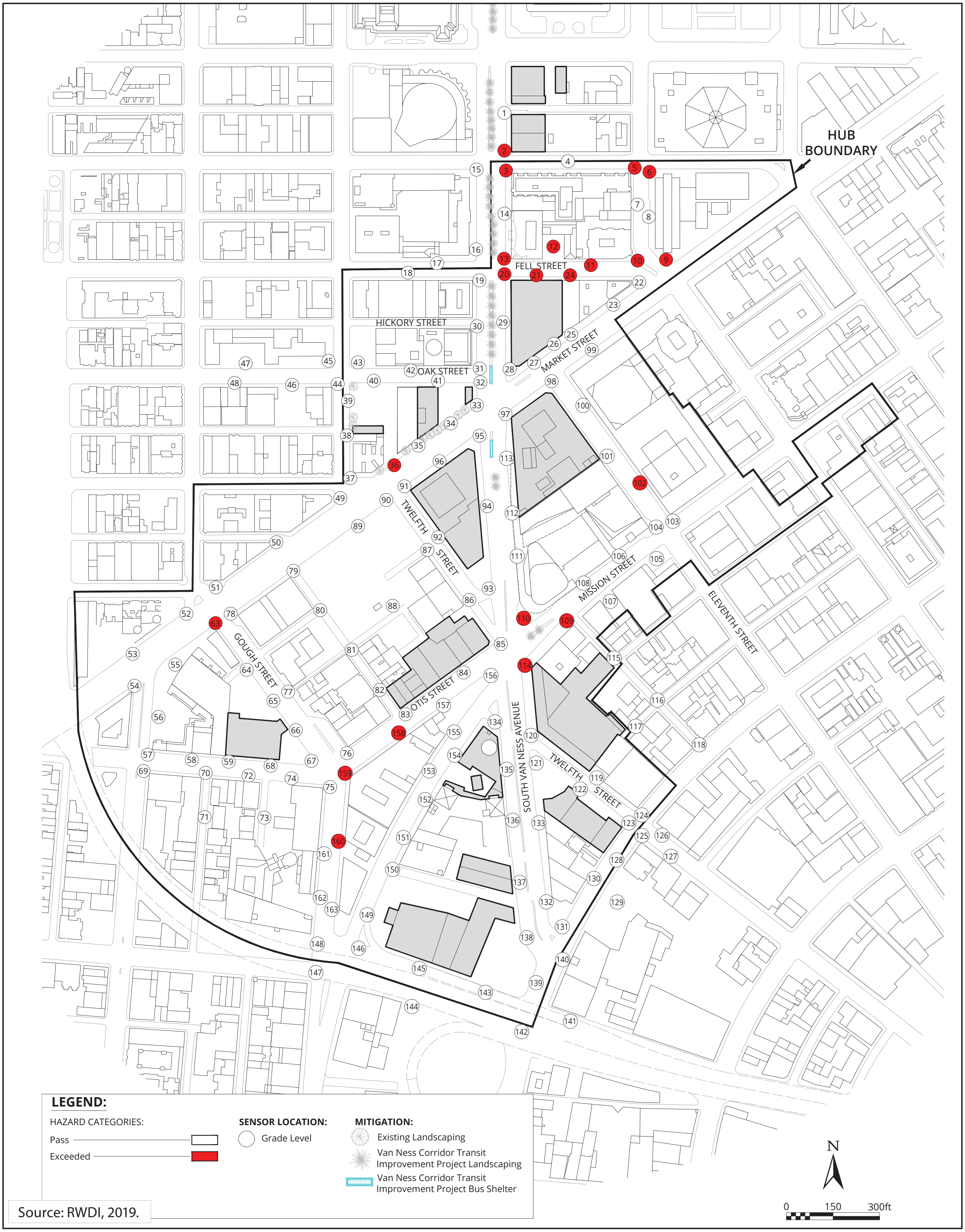
TABLE 3.E-2. THE HUB PLAN WIND HAZARD CONDITIONS

Existing			Existing plus Hub Plan			
Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours/Year Wind Speed Exceeds Hazard Criterion	Exceedances	Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours/Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceedances
27	567	21	29	780	213	32

Source: RWDI, 2019

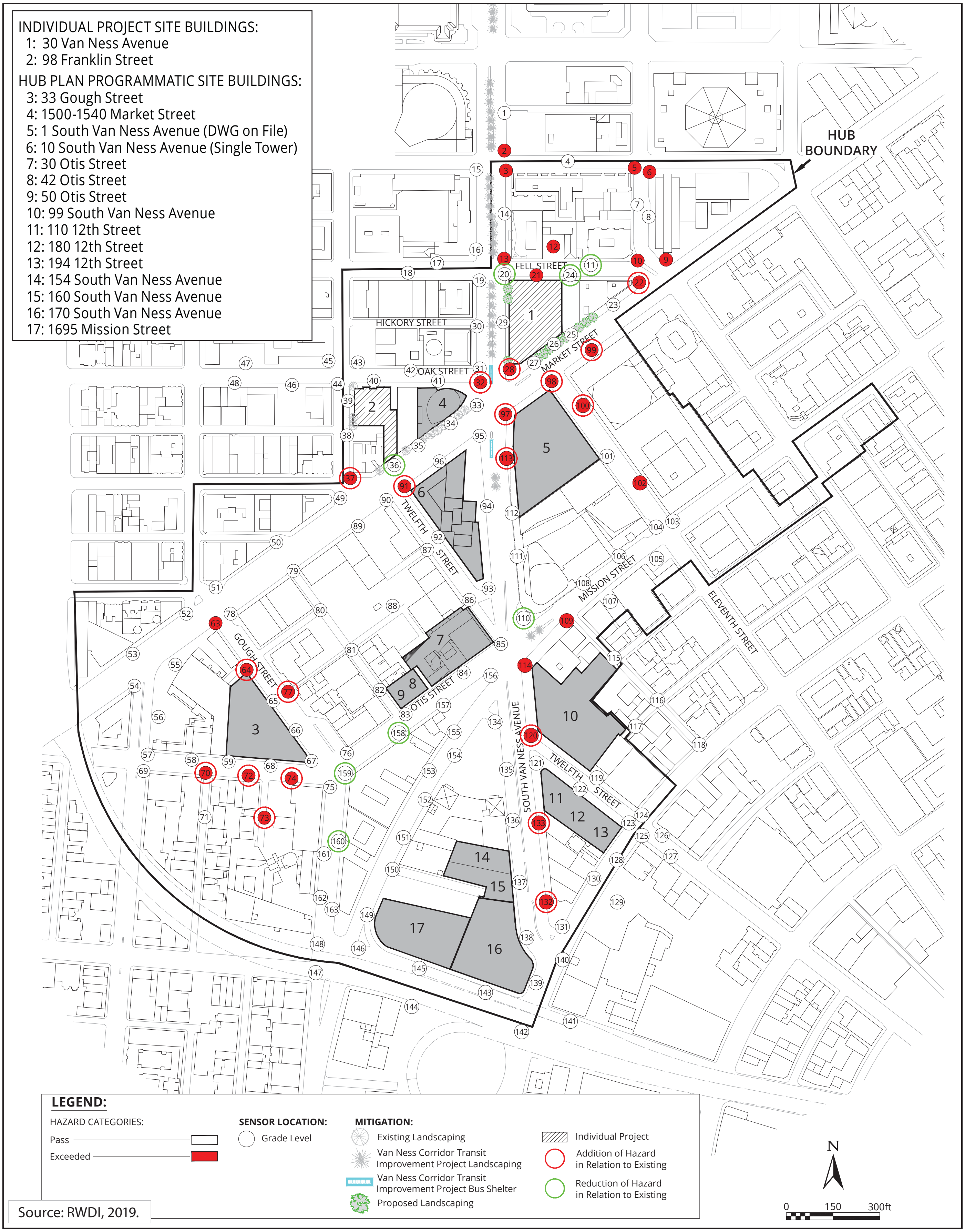
Under the Existing Scenario, the wind hazard criterion is currently exceeded at 21 of the 160 test locations for a total of 567 hours (**Table 3.E-2** and **Figure 3.E-3**). Of these 21 test locations that exceed the hazard criterion, 12 locations are to the north of Market Street, along Fell and Hayes streets. The remaining locations are clustered at the intersections of Mission Street and South Van Ness Avenue, and Otis Street and Gough Street, with individual locations also located along Market and 11th streets.

The addition of the Hub Plan would result in 32 locations that exceed the one-hour per year hazard criterion, or 19 additional locations as compared to existing conditions. However, wind hazard exceedances would be eliminated at 8 locations with implementation of the Hub Plan, resulting in a net increase of wind hazard exceedances of 11 locations compared to existing conditions. The total number of hours per year where winds would exceed the applicable hazard criterion would increase by 213 hours when compared to the existing configuration (**Table 3.E-2** and **Figure 3.E-4**, p. 3.E-18), for a total of 780 hours. The majority of the new exceedances would occur to the north and south of 33 Gough Street, around all faces of 1 South Van Ness, and along South Van Ness Avenue. Uses of these areas include sidewalks, building entrances, and bus stops.



ICF Graphics ... 00700.17 (1-31-2019)

Figure 3.E-3
Existing Pedestrian Wind Hazard Conditions (Hub Plan)



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.E-4
Existing + Hub Plan Pedestrian Wind Hazard Conditions

CONCLUSION

Subsequent development projects proposed in the Hub Plan area may combine building exposure, massing, and/or orientation in a way that accelerates wind speeds at the ground level. In addition, future affordable housing projects in the Hub Plan area could result in additional height, as allowed by density bonus programs. Design details, such as setting back a tall tower from the edges of a podium, installing deep canopies close to ground level, installing wind screens, and planting trees with dense landscaping, could help reduce wind speeds at all future projects. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings. These structural features would be expected to reduce ground-level wind speeds and turbulence.

For the program-level wind testing, wind tunnel models did not include detailed landscape features in open areas or specific building articulation beyond basic setbacks or specific plans identified under the Approach to Analysis section, above. Without these features included in the wind tunnel model, the test results reported are conservative and likely to indicate higher wind speeds than would actually occur. However, the Hub Plan would rezone all of the Hub Plan area to Downtown General Commercial (C-3-G) zoning, with the exception of the two small pockets of existing Public (P) zoning. Therefore, any buildings proposed in the Hub Plan area, including projects for which additional height is requested, pursuant to state density bonus law, would be required to comply with section 148. The specific design for subsequent projects, when proposed, would be required to not exceed the wind hazard criterion specified in section 148. Building articulation and landscaping features for subsequent development projects could eliminate the 11 net new hazard criterion exceedances that were identified in the Hub Plan condition. However, because these details have not been developed and cannot be known at this time, it is not possible to assess the effects that these specific design measures for future buildings may have on winds in the Hub Plan area and vicinity. Therefore, the program-level wind testing of the massing model indicates that the Hub Plan could result in 11 net new exceedances of the one-hour per year hazard criterion, resulting in a ***significant*** impact.

MITIGATION MEASURES

Although all subsequent development projects in the Hub Plan area would be required to comply with section 148, the section does not describe precisely how projects are to comply with this section. Therefore, the mitigation measure below applies to all subsequent development projects in the Hub Plan area that propose buildings with a roof height of more than 85 feet.

As previously discussed, wind speeds increase with elevation. Buildings taller than their surroundings intercept winds at higher elevations and deflect them down to the ground level. This is the main cause for increased ground-level wind activity around tall buildings. In the

Hub Plan area, with the exception of a few tall buildings along Market Street and Van Ness Avenue, most buildings are three to five stories (approximately 30 to 60 feet tall). A new building in the area of 85 feet or less would be the same height as, or slightly taller than, existing buildings and, as a result, would have limited wind exposure. The potential increase in wind speed for these buildings would not be substantial. Thus, it is unlikely that buildings of less than 85 feet would create wind hazards.[31] Therefore, Mitigation Measure M-WI-1a would apply only to buildings that would have a roof height of 85 feet or more. This mitigation measure would not apply to the projects proposed at 30 Van Ness Avenue and 98 Franklin Street, for which project-specific wind analyses have been conducted, as summarized in this EIR (see Impact WI-2, below).

M-WI-1a: ***Wind Analysis and Minimization Measures for Subsequent Projects.*** All projects proposed within the Hub Plan area that would have a roof height greater than 85 feet shall be evaluated by a qualified wind expert, in consultation with the San Francisco Planning Department, to determine their potential to result in a new wind hazard exceedance or aggravate an existing pedestrian-level wind hazard exceedance (defined as the one-hour wind hazard criterion with a 26 mph equivalent wind speed).

If the qualified expert determines that wind-tunnel testing is required due to the potential for a new or worsened wind hazard exceedance, such testing shall be undertaken in coordination with San Francisco Planning Department staff members, with results summarized in a wind report.

The buildings tested in the wind tunnel may incorporate only those wind baffling features that can be shown on plans. Such features must be tested in the wind tunnel and discussed in the wind report in the order of preference discussed below, with the overall intent being to reduce ground-level wind speeds in areas of substantial use by people walking (e.g., sidewalks, plazas, building entries, etc.):

1. ***Building Massing***. New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these include setbacks, stepped facades, and vertical steps in the massing to help disrupt downwashing flows.

31 RWDI, *Market/Octavia Hub Plan Memorandum,* final, June 3, 2019.

2. ***Wind Baffling Measures on the Building and on the Project Sponsor's Private Property.*** Wind baffling measures shall be included on future buildings and/or on the sponsor's private property to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, landscaping, free-standing canopies, or wind screens.[32]

Only after documenting all feasible attempts to reduce wind impacts via building massing and wind baffling measures on a building, shall the following be considered:

3. ***Landscaping and/or Wind Baffling Measures in the Public Right-of-Way***. Landscaping and/or wind baffling measures shall be installed to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side of the areas of concern (i.e., the direction from which the wind is blowing).[33] Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger. If landscaping or wind baffling measures are required as one of the features to mitigate wind impacts, ***Mitigation Measure M-WS-1b*** (below) shall also apply.

M-WI-1b: ***Maintenance Plan for Landscaping and Wind Baffling Measures in the Public Right-of-Way.*** If it is determined that an individual subsequent development project could not reduce additional wind hazards via massing or wind baffling measures on the subject building, the project sponsors shall prepare a maintenance plan for review and approval by the San Francisco Planning Department to ensure maintenance of the features in perpetuity.

---

32 Solid windscreens have a greater effect at reducing the wind speeds to immediate leeward side of the screens; however, outside of this area of influence, the winds are either unaffected or accelerated. Porous windscreens have less of an impact to the immediate leeward side; however, they have an increased area of influence and are less likely to cause any accelerations of the winds further downwind.

33 Landscaping typically impacts winds locally; the larger the tree crown and canopy, the greater the area of influence. Tall, slender trees with little foliage have little to no impact on local winds speeds at ground level because of the height of the foliage above ground. Shorter street trees with larger canopies help reduce winds around them but their influence on conditions farther away is limited.

Significance after Mitigation

Implementation of Mitigation Measures M-WI-1a and M-WI-1b would reduce the potential for a net increase in wind hazard exceedances and the hours of wind hazard exceedances through identification of methods to comply with section 148 and a specific maintenance plan to ensure wind baffling in perpetuity. Therefore, this impact would be reduced to ***less than significant with mitigation***.

Impact WI-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create wind hazards in publicly accessible areas with substantial pedestrian use. (Less than Significant with Mitigation)

30 Van Ness Avenue Project

A total of 160 test locations were included in the assessment of potential wind impacts for people walking for the 30 Van Ness Avenue Project.[34]

Wind Comfort

Table 3.E-3 presents the wind comfort results for the Existing Scenario and the Existing plus 30 Van Ness Avenue Project Scenario. For each measurement point, the measured 10 percent exceeded (90th percentile) equivalent wind speed and the percentage of time that the wind speed would exceed 11 mph are listed for areas considered to be used primarily for walking. The point is marked as a comfort exceedance if the 11 mph threshold is exceeded. However, the table only includes a summary of the wind comfort conditions as a result of the 30 Van Ness Avenue Project; the results of the wind comfort conditions for all measurement locations is included in Appendix G-4.

Table 3.E-3. 30 Van Ness Avenue Project Wind Comfort Conditions

Existing			Existing plus 30 Van Ness Avenue Project			
Average Wind Speed Exceeded 10% of Time (mph)	Average % of Time Wind Speed Exceeds 11 Miles per Hour (%)	Exceedances	Average Wind Speed Exceeded 10% of Time (mph)	Average % of Time Wind Speed Exceeds 11 Miles per Hour (%)	Speed Change Relative to Existing (mph)	Exceedances
13	20	112	14	21	1	126

Source: RWDI, 2019

[34] As discussed above, although there are 163 numbered test locations, only 160 are included here since sensors 60, 61, and 62 are currently not active.

For the existing configuration, wind speeds exceed 11 mph at most of the areas, averaging 13.4 mph across all measurement locations. On average, wind speeds exceed 11 mph 20 percent of the time. Winds at 112 out of 160 test locations exceed the 11 mph criterion. Wind speeds below 11 mph are predicted at a few isolated locations offsite. **Figure 3.E-5** depicts the existing wind comfort conditions on and around the project site.

With the addition of the 30 Van Ness Avenue Project, a small net increase (approximately 0.3 mph) in wind speeds is expected as compared to the existing configuration. The average wind speed is predicted to be 13.7 mph. The wind speeds at a total of 126 locations (**Figure 3.E-6,** p. 3.E-25) would exceed the planning code's comfort criterion of 11 mph for people walking. However, the 30 Van Ness Avenue Project would eliminate existing wind comfort exceedances at four locations; therefore, the 30 Van Ness Avenue Project would result in a net increase of 14 test locations as compared to existing conditions. Winds would exceed the 11 mph criterion approximately 21 percent of the time, representing a 1 percent increase compared to the existing configuration with implementation of the 30 Van Ness Avenue Project.

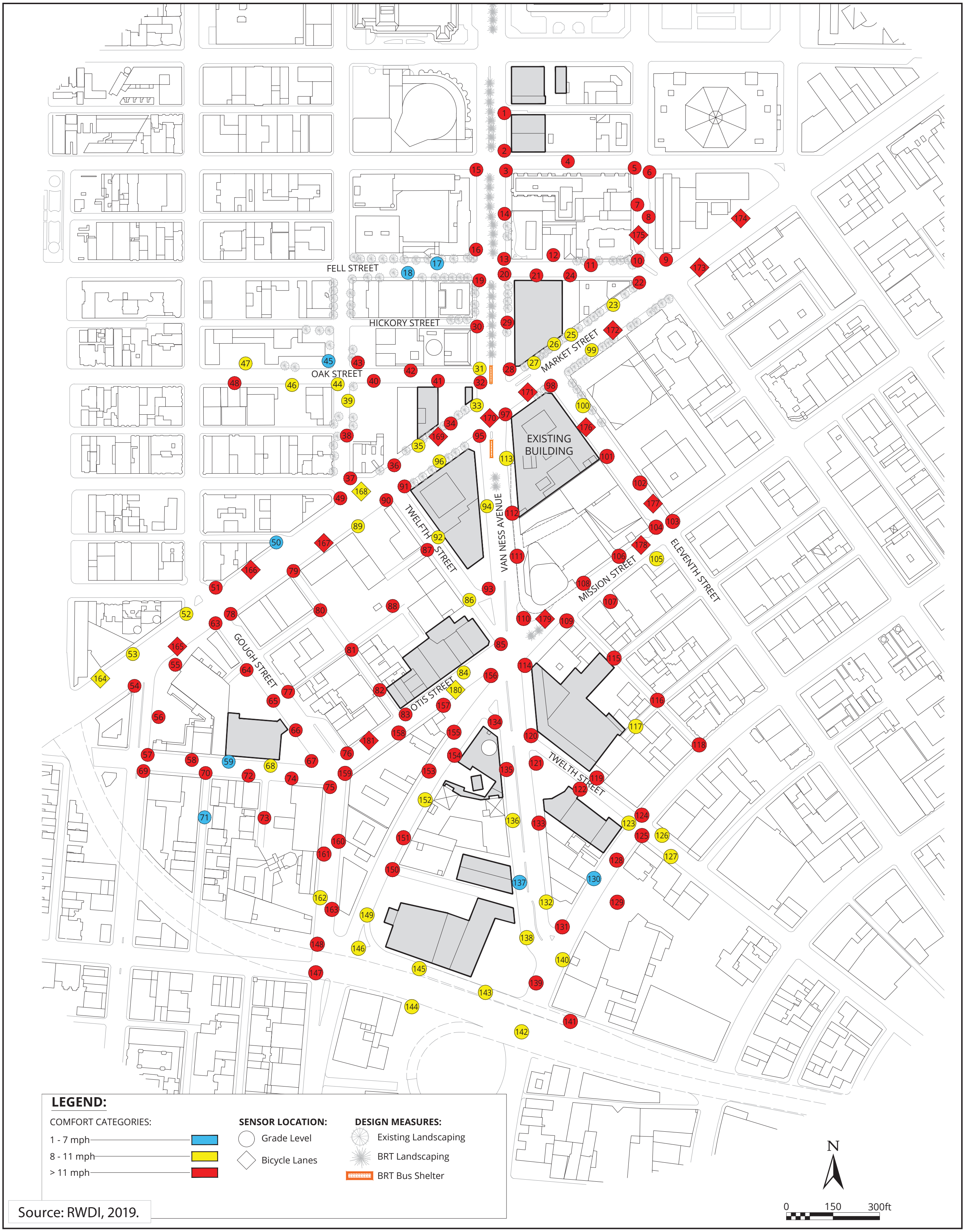
Wind Hazard

Table 3.E-4 presents the wind hazard results for the Existing Scenario and the Existing plus 30 Van Ness Avenue Project Scenario. In addition, the table lists the predicted average wind speeds that would be exceeded one hour per year. The predicted average number of hours per year that the section 148 wind hazard criterion (one-minute wind speed of 36 mph) would be exceeded is also provided. The table only includes a summary of wind hazard conditions as a result of the 30 Van Ness Avenue Project. The results of the wind hazard conditions for all measurement locations is included in Appendix G-4. Under the Existing Scenario, the wind hazard criterion is currently exceeded at 19 of the 160 test locations for a total of 508 hours (**Table 3.E-4** and **Figure 3.E-7**, p. 3.E-26). The 19 locations that currently exceed the hazard criterion include Locations 2, 3, 5, 6, 9, 10, 12, 13, 20, 21, 24, 63, 102, 109, 110, 114, 158, 159, and 160.

TABLE 3.E-4. 30 VAN NESS AVENUE PROJECT WIND HAZARD CONDITIONS

Existing			Existing plus 30 Van Ness Avenue Project			
Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours/Year Wind Speed Exceeds Hazard Criterion	Exceedances	Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours/Year Wind Speed Exceeds Hazard Criterion	Hours Change Relative to Existing	Exceedances
26	508	19	26	322	-186	19

Source: RWDI, 2019



ICF Graphics ... 00700.17 (1-24-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.E-5
Existing Pedestrian Wind Comfort Conditions (30 Van Ness)

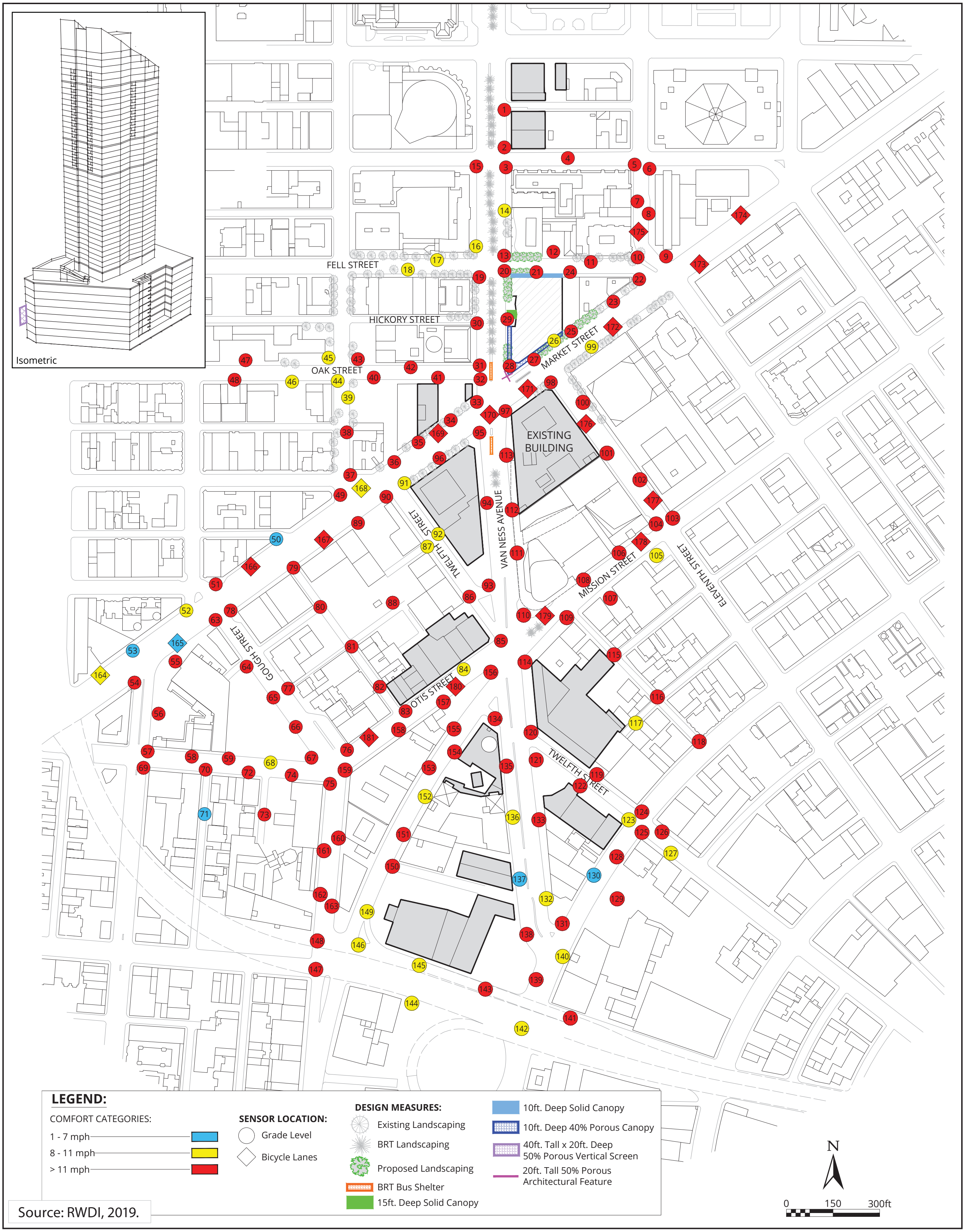


Figure 3.E-6
Existing + 30 Van Ness Avenue Project Wind Comfort Conditions

Figure 3.E-7
Existing Pedestrian Wind Hazard Conditions (30 Van Ness)

With the addition of the 30 Van Ness Avenue Project, the number of locations where the wind hazard criterion is predicted to be exceeded is anticipated to remain the same as in the existing configuration, for a total of 322 hours. Because of the addition of design features, such as a sculptural feature, overhead canopies, vertical wind screens, and landscaping, some existing onsite and nearby windy areas are expected to improve (Locations 12, 20, and 24 in **Figure 3.E-8**), whereas some additional offsite locations are predicted to exceed the hazard criterion (Locations 22, 41, and 97 in **Figure 3.E-8**). Overall, the number of locations with hazardous wind conditions would remain the same as under existing conditions, but the total number of hours with hazardous wind conditions would decrease from 508 to 322.

Conclusion

The 30 Van Ness Avenue Project would result in no net increase of test locations exceeding the wind hazard criterion. In addition, the total number of hours with hazardous wind conditions would decrease by 186 hours under the 30 Van Ness Avenue Project. The addition of the proposed onsite landscaping (along with the combination of other wind control measures) is expected to improve the wind hazard conditions compared to the Existing Scenario. However, because the proposed landscaping is not guaranteed to be maintained during operation of the 30 Van Ness Avenue Project, impacts would be ***significant***.

MITIGATION MEASURES

Mitigation Measure M-WI-1b, as listed above under Impact WI-1, will be implemented for the 30 Van Ness Avenue Project.

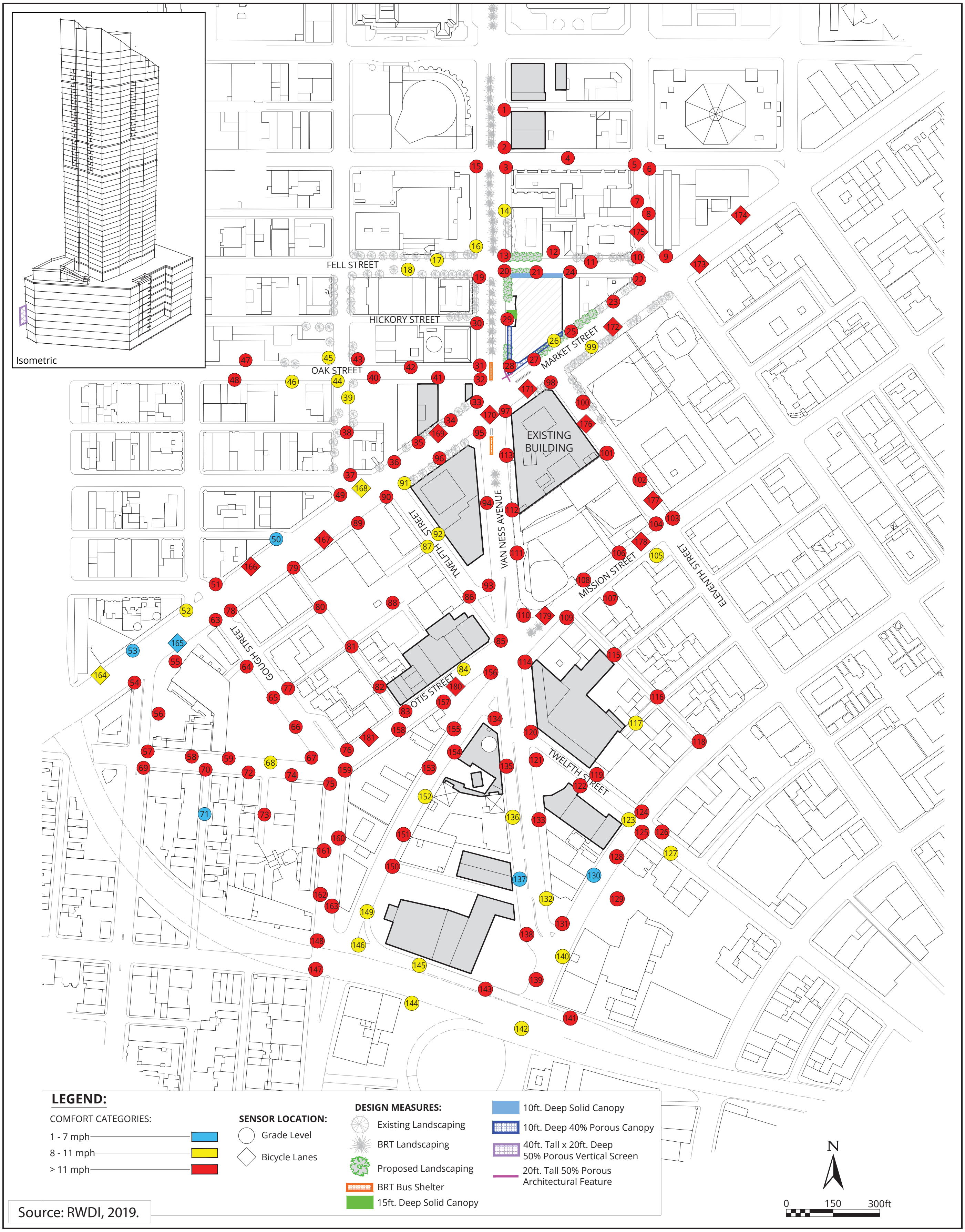
SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure M-WI-1b, as listed above under Impact WI-1, requires a maintenance plan for landscaping and wind baffling measures in the public right-of-way. This mitigation measure would reduce the potential for a net increase in wind hazard exceedances and the hours of wind hazard exceedances through a specific maintenance plan to ensure wind baffling in perpetuity. Therefore, the wind impact from the 30 Van Ness Avenue Project would be reduced to ***less than significant with mitigation***.

98 FRANKLIN STREET PROJECT

Wind Comfort

Table 3.E-5, p. 3.E-29, shows the wind comfort analysis results for the Existing Scenario and Existing plus 98 Franklin Street Project Scenario. The wind comfort results are expressed as the probability of exceeding the comfort one-minute mean wind speed of 11 mph followed by the one-minute mean wind speed that is exceeded 10 percent of the time. All of the points tested were on sidewalks, at corners with crosswalks, or within the publicly accessible use areas for



Source: RWDI, 2019.

ICF Graphics ... 00700.17 (1-24-2019)

Figure 3.E-8
Existing + 30 Van Ness Avenue Project Wind Hazard Conditions

TABLE 3.E-5. 98 FRANKLIN STREET PROJECT WIND COMFORT CONDITIONS

	Existing			Existing plus 98 Franklin Street Project			
Location	**Wind Speed Exceeded 10% of Time (mph)**	**% of Time Wind Speed Exceeds 11 Miles per Hour (%)**	**Exceedances**	**Wind Speed Exceeded 10% of Time (mph)**	**% of Time Wind Speed Exceeds 11 Miles per Hour (%)**	**Speed Change Relative to Existing (mph)**	**Exceedances**
Average (All)	14.2	22	64	14.6	24	0.4	69
Average[a]	14.1	22	45	14.7	25	0.6	51

Source: BMT, 2019.

Notes:

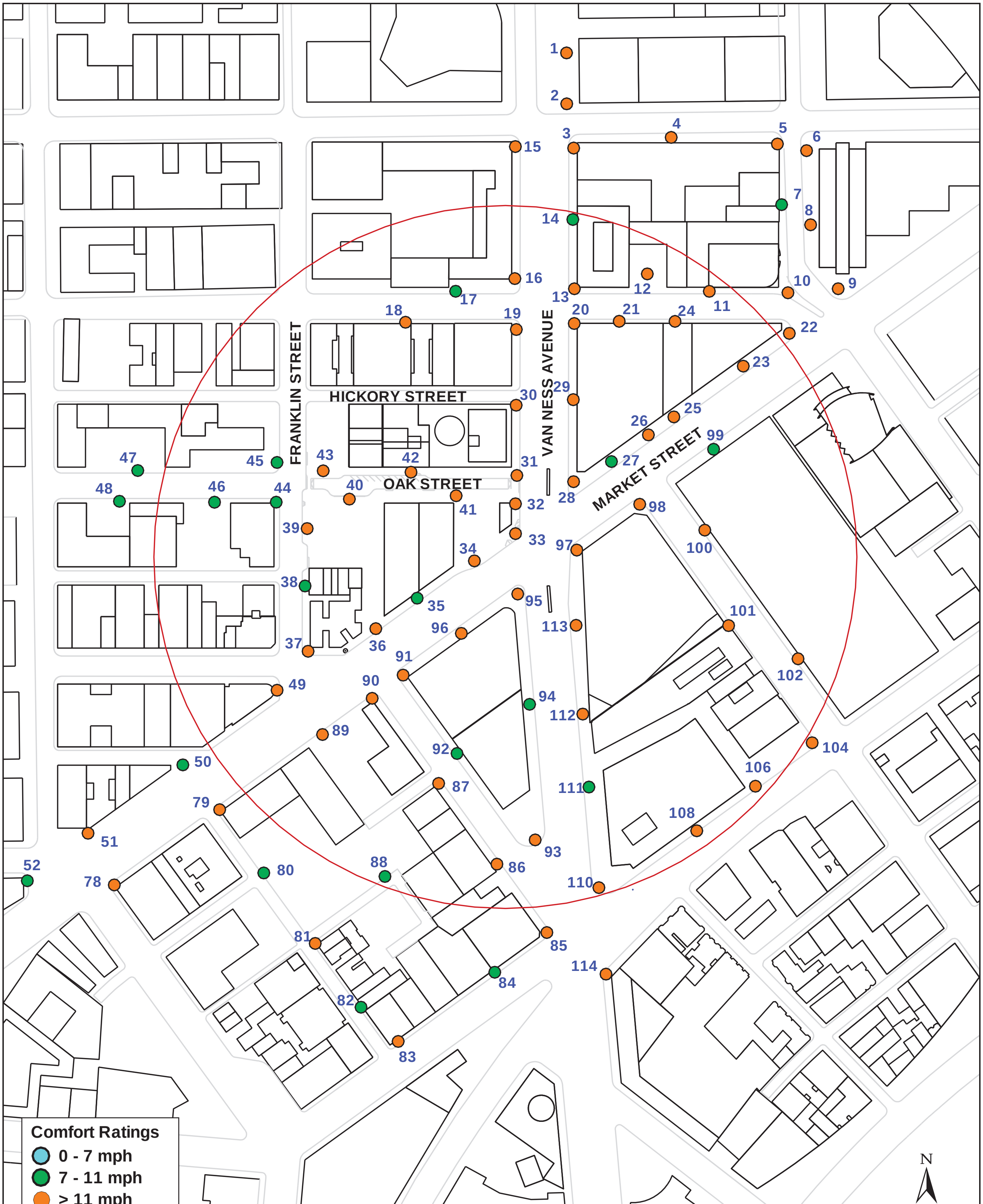
a. project-specific test points

people walking on the project site and within the study area. However, the table includes only a summary of wind comfort conditions with the 98 Franklin Street Project; the results of the wind comfort conditions for all measurement locations is included in Appendix G-6. **Figure 3.E-9** depicts the existing wind comfort conditions for people walking.

Existing wind conditions in the project site's vicinity are generally characterized as windy. The site and surroundings are subject to wind in excess of the comfort criterion for more than 10 percent of the time during the year at multiple test points. Wind at 64 of the 85 total test points exceed the comfort criterion. As shown in **Table 3.E-5**, the average year-round wind speed exceeded 10 percent of the time, between 7 a.m. and 6 p.m., for all test points is 14.2 mph, which is higher than the city's 11 mph comfort criterion for areas of use by people walking.

The existing wind conditions at 45 out of 58 total project-specific test points within the reduced radius exceed the comfort criterion. The average year-round wind speed exceeded 10 percent of the time, between 7 a.m. and 6 p.m., for all test points is 14.1 mph, which is higher than the city's 11 mph comfort criterion for areas of use by people walking. **Figure 3.E-9** depicts the existing wind comfort conditions for people walking.

In terms of comfort, the average year-round wind speed, exceeded 10 percent of the time between 7 a.m. to 6 p.m. for all test locations, would slightly increase under the project from 14.2 mph to 14.6 mph. This results in a higher wind speed than the 11 mph comfort criterion for areas of use by people walking. Wind conditions at a total of 69 out of 85 test points would



Source: BMT, 2019.

ICF Graphics ... 00700.17 (1-24-2019)

Figure 3.E-9
Existing Pedestrian Wind Comfort Conditions (98 Franklin)

exceed the comfort criterion for the Existing plus 98 Franklin Street Project Scenario[35] (as shown in **Table 3.E-5**, p. 3.E-29, and **Figure 3.E-10**). However, the project would eliminate existing wind comfort exceedances at four locations; therefore, the project would result in a net increase of five test locations as compared to existing conditions. Wind conditions at 51 out of the 58 project-specific test points within a reduced radius from the project site would exceed the comfort criterion for the Existing plus 98 Franklin Street Project Scenario.

Wind Hazard

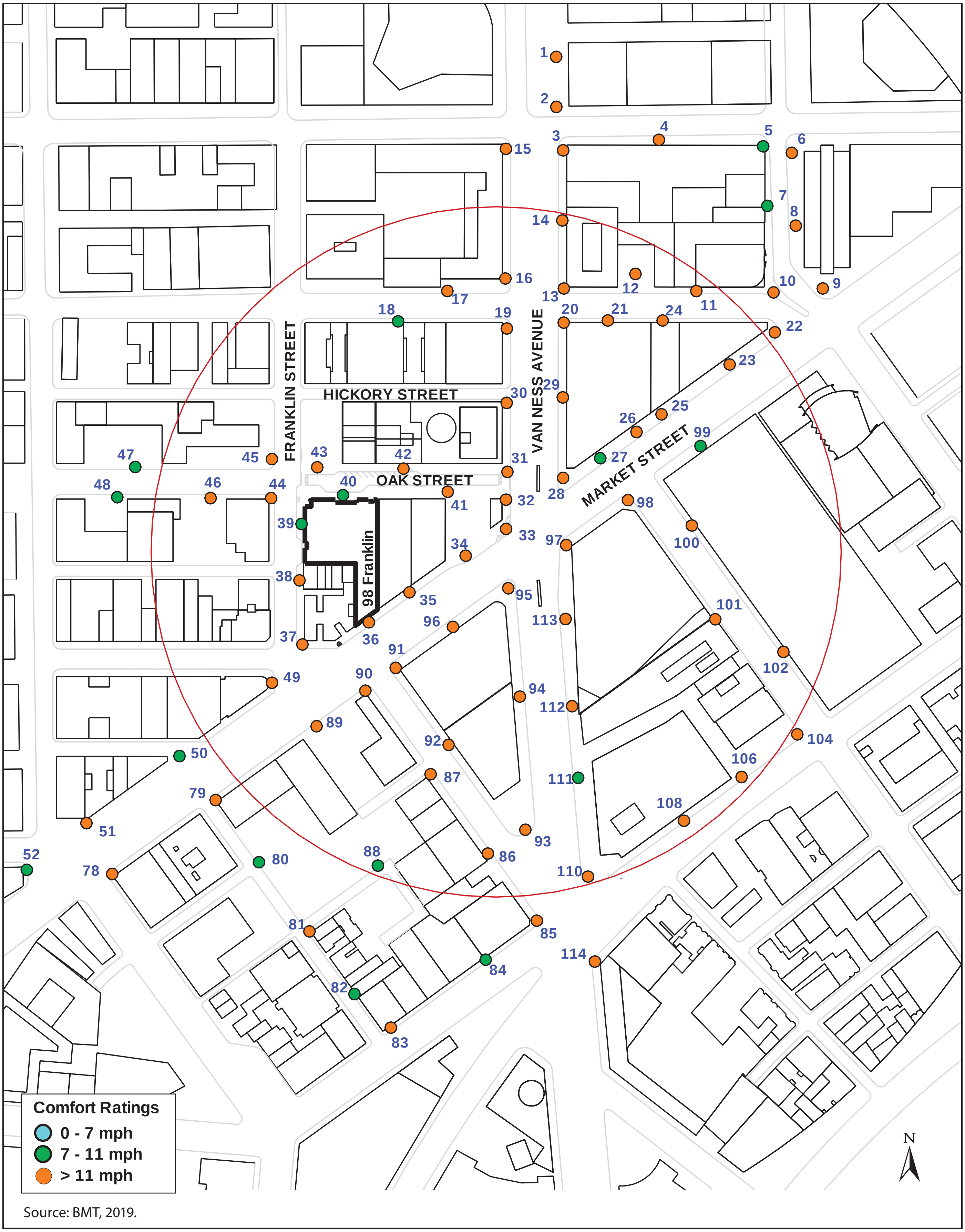
Table 3.E-6 shows the wind hazard results presented as the probability of having an equivalent wind speed exceed the 26 mph mean hourly wind speed hazard criterion for a full hour within any one-year period, followed by the wind speed that is exceeded once per year and the number of hours that the hazard criterion of 26 mph is exceeded. The 26 mph hourly average is converted to a one-minute mean of 36 mph, which is used to determine compliance with the 26 mph one-hour hazard criterion in the planning code. However, the table only includes a summary of the wind hazard conditions with the 98 Franklin Street Project; the results of the wind hazard conditions for all measurement locations is included in Appendix G-6. **Figure 3.E-11**, p. 3.E-33, depicts the existing wind hazard conditions for people walking.

TABLE 3.E-6. 98 FRANKLIN STREET PROJECT WIND HAZARD CONDITIONS

	Existing			Existing plus 98 Franklin Street Project			
Location	Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours Per Year Wind Speed Exceeds Hazard Criterion	Exceedances	Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours Per Year Wind Speed Exceeds Hazard Criterion	Total Hours Change Relative to Existing	Exceedances[a]
Average/ Sum (All)	29.7	457	17	30.3	427	-30	14
Average/ Sum[a]	29.6	305	9	30.6	289	-16	8

Source: BMT, 2019.
Notes:
a. project-specific test points

[35] As noted above, the 98 Franklin Street wind study includes the Existing plus 98 Franklin Street Project Scenario and the Existing plus 98 Franklin Street Project with Mitigation Scenario. As a result of the findings in the wind study, the proposed measures to reduce wind impacts are now included as part of the 98 Franklin Street Project. Therefore, only one scenario for the 98 Franklin Street Project is analyzed in this section.

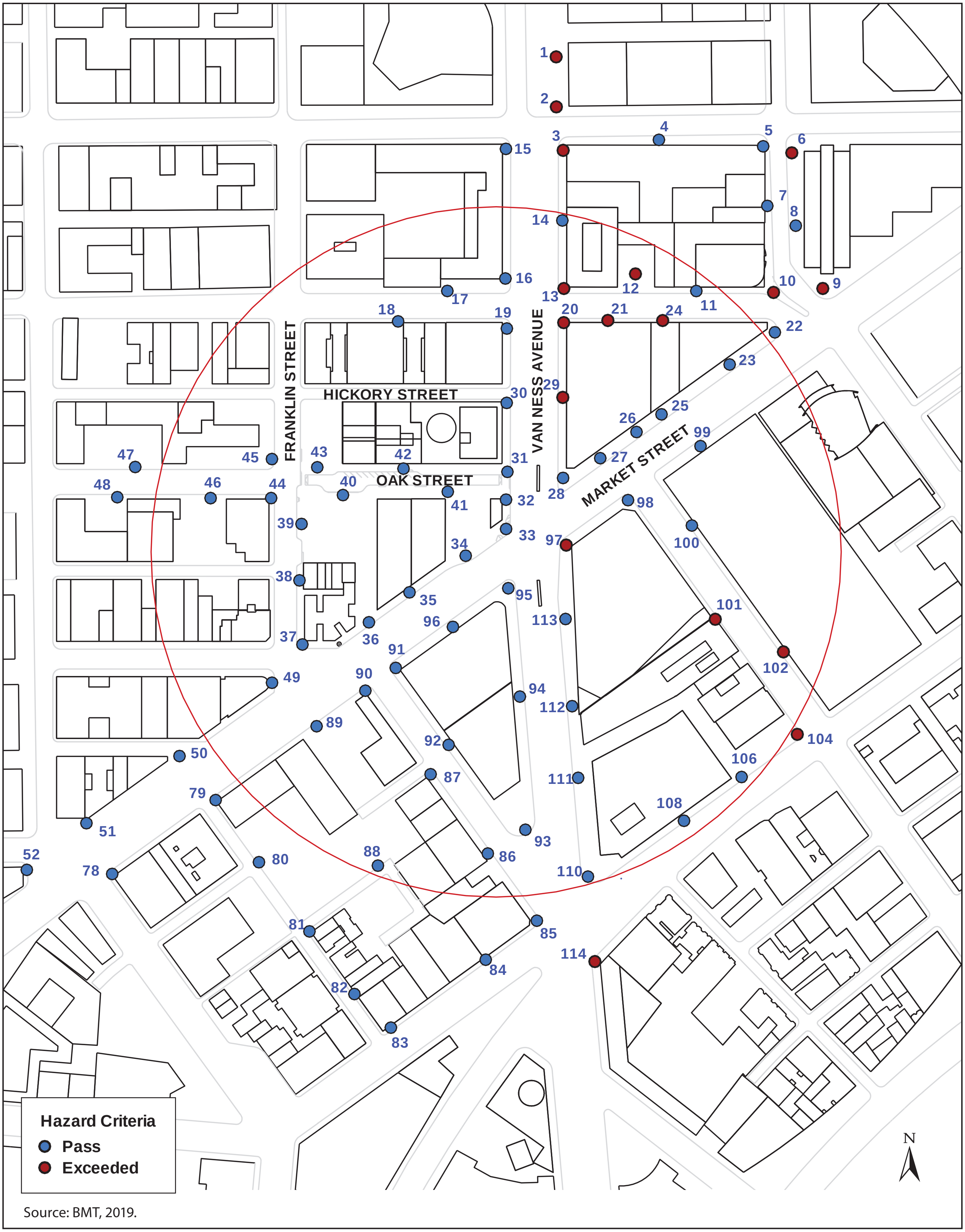


ICF Graphics ... 00700.17 (1-31-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.E-10
Existing + 98 Franklin Street Project Wind Comfort Conditions



ICF Graphics ... 00700.17 (1-31-2019)

Figure 3.E-11
Existing Pedestrian Wind Hazard Conditions (98 Franklin)

Within the Existing Scenario, wind conditions exceed the hazard criterion at 17 out of 85 test points. The total number of hazard exceedance hours is 457, as shown in **Table 3.E-6,** p. 3.E-31. The wind conditions at nine out of 58 total project-specific test points within the reduced radius exceed the hazard criterion. The total number of hazard exceedance hours is 305. **Figure 3.E-11**, p. 3.E-33, depicts the existing wind hazard conditions for people walking.

The number of test points in which wind conditions exceed the hazard criterion would be decreased from 17 in the Existing Scenario to 14 in the Existing plus 98 Franklin Street Project Scenario. Additionally, the total duration of hazardous wind conditions would be decreased from 457 hours to 427 hours, representing a net decrease of 30 hours of hazardous wind conditions compared to the Existing Scenario (see **Table 3.E-6**, p. 3.E-31, and **Figure 3.E-12**). The wind conditions at project-specific test points within the reduced radius that would exceed the hazard criterion would be reduced from nine in the Existing Scenario to eight in the Existing plus 98 Franklin Street Project Scenario. The total duration of hazardous wind conditions would be decreased from 305 hours to 289 hours, representing a net decrease of 16 hours of hazardous wind conditions compared to Existing Scenario.

Conclusion

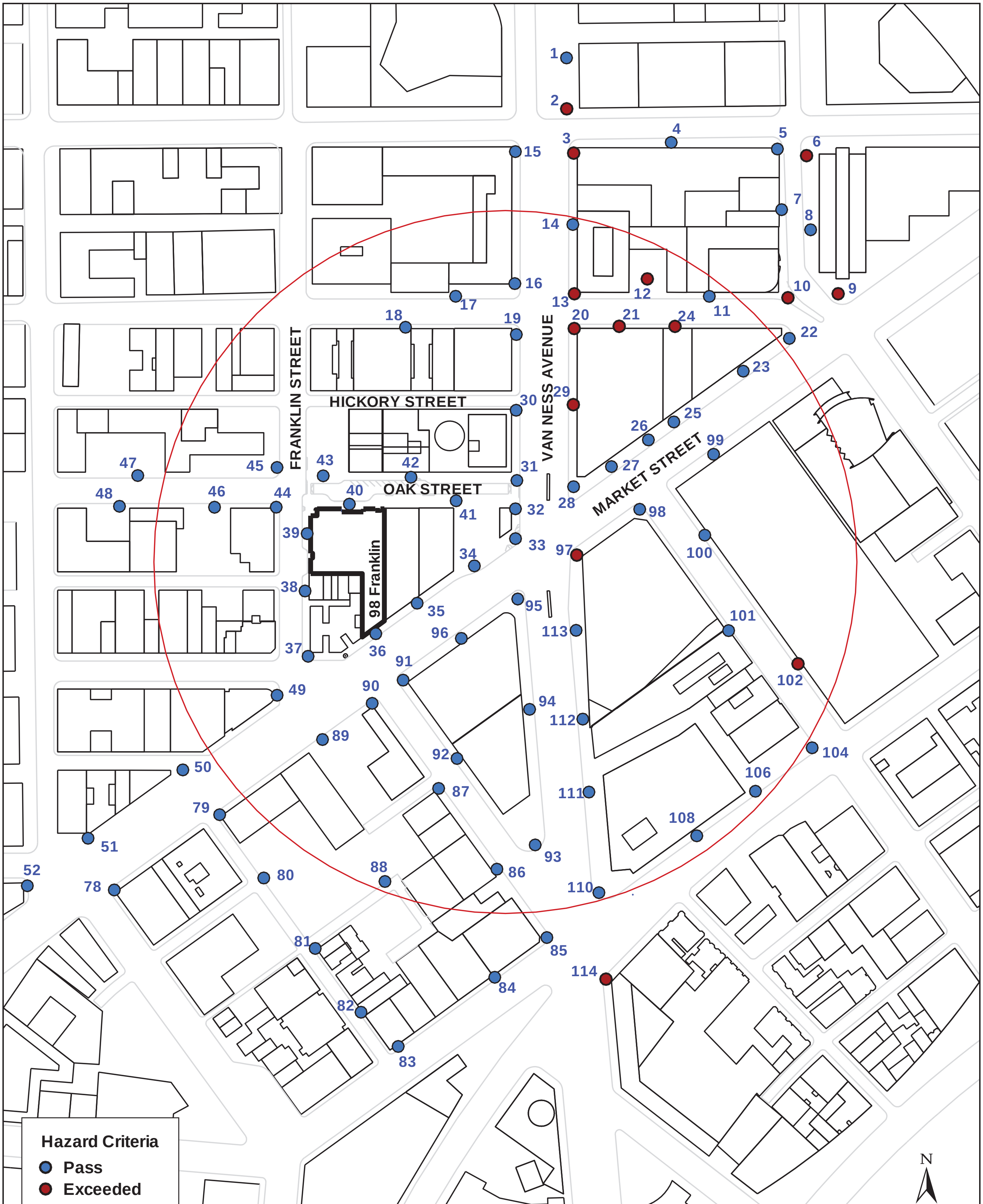
The 98 Franklin Street Project would result in a slight net decrease of test locations exceeding the wind hazard criterion. In addition, the total number of hours with hazardous wind conditions would be reduced under the 98 Franklin Street Project. The 98 Franklin Street Project would include evergreen trees along Franklin and Oak streets, four replacement evergreen trees along Oak Street, and a canopy along the western façade of the project (along Franklin Street). The proposed landscaping is expected to improve wind hazard conditions compared with the Existing Scenario. However, because the proposed landscaping is not guaranteed to be maintained during operation of the 98 Franklin Street Project, impacts would be ***significant***.

MITIGATION MEASURES

Mitigation Measure M-WI-1b, as listed above under Impact WI-1, will be implemented for the 98 Franklin Street Project.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure M-WI-1b, as listed above under Impact WI-1, requires a maintenance plan for landscaping and wind baffling measures in the public right-of-way. This mitigation measure would reduce the potential for a net increase in wind hazard exceedances and the hours of wind hazard exceedances through a specific maintenance plan to ensure wind baffling in perpetuity. Therefore, the wind impact from the 98 Franklin Street Project would be reduced to ***less than significant with mitigation***.



Source: BMT, 2019.

ICF Graphics ... 00700.17 (1-24-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.E-12
Existing + 98 Franklin Street Project Wind Hazard Conditions

CUMULATIVE IMPACTS

Impact C-WI-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts. (Significant and Unavoidable with Mitigation)

The cumulative conditions were modeled in the Hub Plan wind study by RWDI. As discussed above, in addition to the Hub Plan buildings, the 30 Van Ness Avenue Project, and the 98 Franklin Street Project, the cumulative analysis also includes anticipated future buildings that had not begun construction as of May 2018.[36]

WIND COMFORT

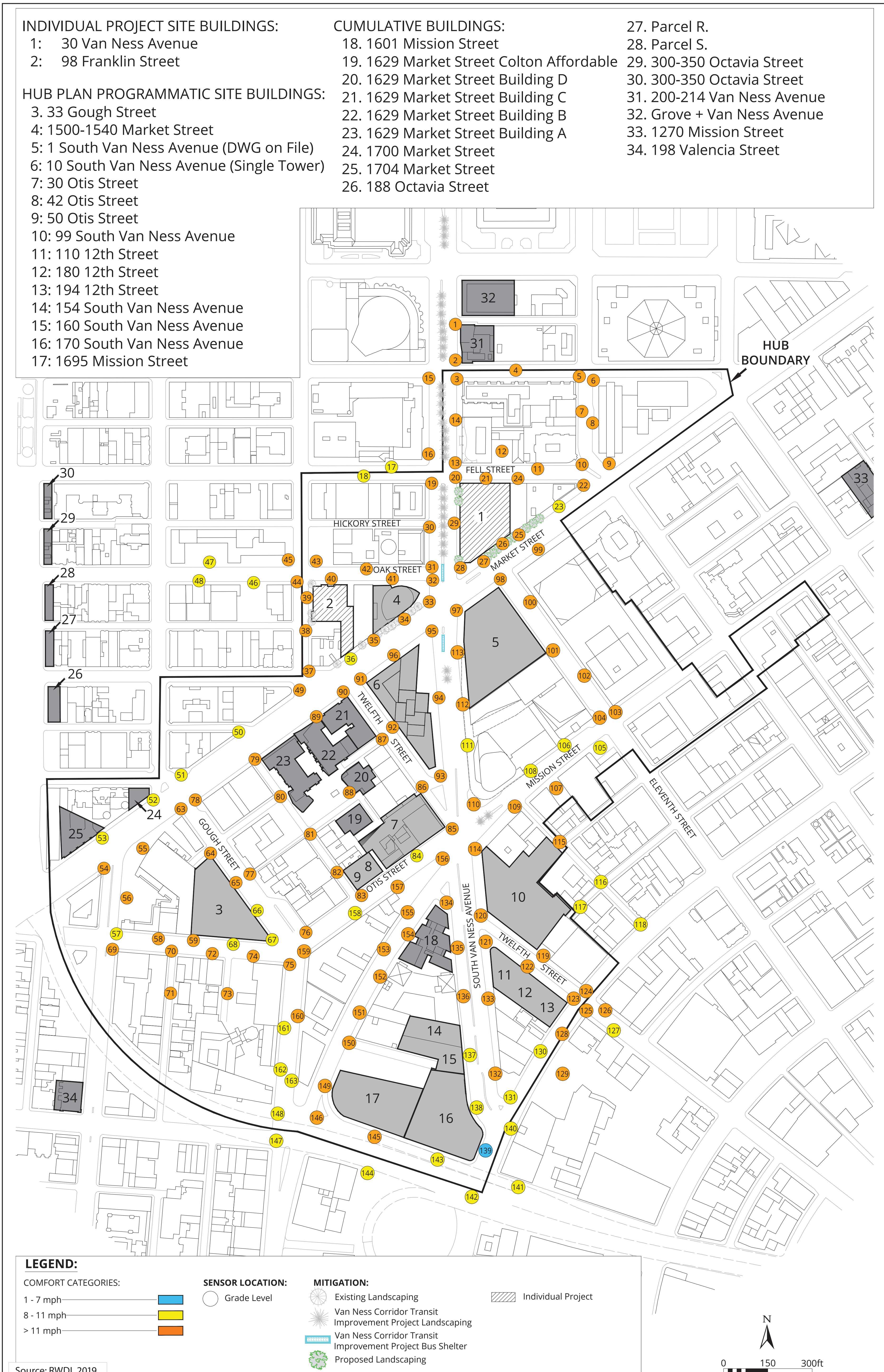
Table 3.E-7 presents the comfort analysis results for people walking for both the Existing and Cumulative scenarios. However, the table only provides a summary of the averages and total wind comfort exceedances for all 160 measurement locations. The results of the wind comfort conditions for all measurement locations is included in Appendix G-1. **Figure 3.E-13** shows the cumulative wind comfort conditions for people walking.

TABLE 3.E-7. CUMULATIVE WIND COMFORT CONDITIONS

Existing			Cumulative			
Average Wind Speed Exceeded 10% of Time (mph)	**Average % of Time Wind Speed Exceeds 11 Miles per Hour (%)**	**Exceedances**	**Average Wind Speed Exceeded 10% of Time (mph)**	**Average % of Time Wind Speed Exceeds 11 Miles per Hour (%)**	**Speed Change Relative to Existing (mph)**	**Exceedances**
14	21	114	15	24	1	120

Source: RWDI, 2019

36 As discussed above, the cumulative condition analyzed in this section assumes that the 10 South Van Ness Avenue property would be constructed with a 590-foot-tall single tower. An analysis of the 400-foot-tall double tower is included in Appendix G-1.



The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.E-13
Cumulative Pedestrian Wind Comfort Conditions

This Page Intentionally Left Blank

The addition of the cumulative project in the surrounding area would result in wind speeds similar to the existing and existing-plus-Hub Plan configurations, as discussed in Impact WI-1, above. Under the Existing Scenario, wind speeds would exceed the planning code's comfort criterion of 11 mph for people walking at 114 test locations. Under the Cumulative Scenario, the average 90th percentile wind speed for the 160 test locations would be 15 mph, with the wind speeds at 120 test locations exceeding the planning code's comfort criterion of 11 mph for people walking. However, the Cumulative Scenario would eliminate existing wind comfort exceedances at 19 locations; therefore, the Cumulative Scenario would result in a net increase of 6 test locations as compared to the existing conditions. Winds would exceed the criterion approximately 24 percent of the time, representing a 3 percent increase compared to existing conditions.

WIND HAZARD

Table 3.E-8 presents the wind hazard analysis results for existing and cumulative conditions and lists the predicted wind speed to be exceeded one hour per year. However, the table only provides a summary of the averages and total wind hazard exceedances for all 160 measurement locations. The results of the wind hazard conditions for all measurement locations is included in Appendix G-1. The predicted number of hours per year that the section 148 wind hazard criterion (one-minute wind speed of 36 mph) is also provided**. Figure 3.E-14,** p. 3.E-41, shows the cumulative wind hazard conditions for people walking.

TABLE 3.E-8. CUMULATIVE WIND HAZARD CONDITIONS

Existing			Cumulative			
Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours/Year Wind Speed Exceeds Hazard Criterion	Total Exceedances	Average Wind Speed Exceeded 1 Hour/Year (mph)	Total Hours/Year Wind Speed Exceeds Hazard Criterion	Hours Change Relativ e to Existing	Exceedances
27	567	21	29	888	321	36

Source: RWDI, 2019

The addition of the cumulative projects would result in 36 locations that exceed the one-hour per year hazard criterion, with 24 additional locations as compared to existing conditions. However, wind hazard exceedances would be eliminated at 9 locations with implementation of the Cumulative Scenario, resulting in a net increase of wind hazard exceedances of 15 locations compared to existing conditions. The total number of hours per year when winds would exceed the applicable hazard criterion would increase by 321 compared with the existing configuration

(**Table 3.E-8**, p. 3.E-39, and **Figure 3.E-14**, p. 3.E-41), for a total of 888 hours. The new locations resulting from the Cumulative Scenario are in mostly in the same locations as the existing-plus-Hub Plan configuration with the exception of Locations 1, 34 and 132, and additionally at 10 South Van Ness Avenue (Location 92) and 1601 Mission Street (Locations 121, 133, 134 and 155).

CONCLUSION

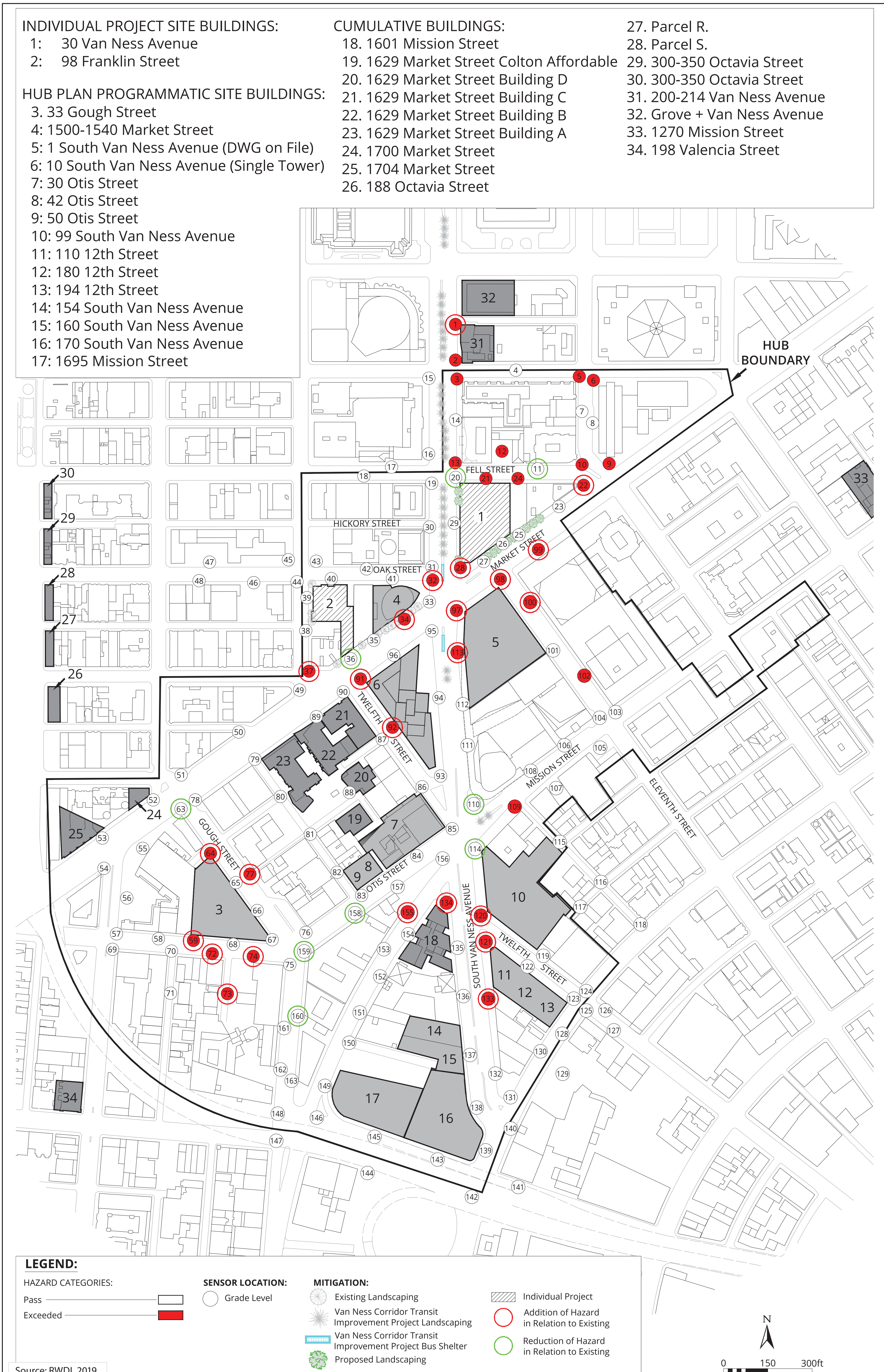
Because the exact contribution of the 30 Van Ness Avenue Project and the 98 Franklin Street Project to the cumulative wind environment is unknown, it is conservatively assumed that these two individual projects would contribute to a cumulatively considerable impact. The Hub Plan, in combination with other reasonably foreseeable projects, would also result in a cumulatively considerable impact.

Mitigation Measures

Implementation of Mitigation Measures M-WI-1a (for buildings with a height of more than 85 feet) and M-WI-1b, as described in Impact WI-1, above, would reduce the potential for a net increase in wind hazard exceedances and the hours of wind hazard exceedances. Future projects in the Hub Plan area would be required to comply with section 148.

Significance After Mitigation

However, compliance with section 148 does not guarantee that cumulative impacts would not result. The specific design for subsequent reasonably foreseeable projects, when proposed, would be required not to exceed the wind hazard criterion specified in section 148. Building articulation and landscaping features for subsequent development projects could eliminate new hazard criterion exceedances for future projects. Although future project mitigation and/or design modifications would be based on a test of existing conditions (i.e., when a future project is proposed), using section 148 alone, they would not consider other foreseeable buildings in the area. Therefore, it cannot be stated with certainty that each subsequent development project would not contribute to a cumulative impact without substantial modifications to individual project design and programs. In conclusion, the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street Project would result in a cumulatively considerable contribution, and impacts would be ***significant and unavoidable with mitigation***.



ICF Graphics ... 00700.17 (4-24-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.E-14
Cumulative Pedestrian Wind Hazard Conditions

This Page Intentionally Left Blank

3.F SHADOW

This section of the EIR analyzes potential shadow impacts that could occur as a result of the Hub Plan,[1] the two individual development projects, the Hub Housing Sustainability District (HSD), and cumulative conditions. The analysis assesses the potential for implementation of the Hub Plan, two individual development projects, and Hub HSD to adversely affect existing shadow patterns compared to existing conditions and under cumulative conditions. The section discusses the environmental setting, regulatory framework, environmental impacts, and mitigation measures for shadow.

In addition, this section describes the potential shadow effects on publicly accessible areas, including public parks, publicly accessible private open space, and sidewalks. The analysis describes the physical impacts of new shadow, qualitatively assesses the potential shadow impacts on the use of the affected open spaces, and discusses planning code section 295, which protects certain public open spaces under the jurisdiction of the Recreation and Parks Commission from shadowing by new structures greater than 40 feet tall. The shadow findings in this section are based on the *Shadow Analysis Report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR* (Shadow Study) prepared by Prevision Design (Appendix H-1).[2] In addition, two subsequent memoranda were prepared by Prevision Design to address design changes to 170 Otis Street[3] under the Hub Plan and the 30 Van Ness Avenue Project and the reduced impact on Civic Center Plaza.[4]

The City and County of San Francisco (City) received no comments related to shadow on the Notice of Preparation (Appendix A) issued for the Hub Plan, the two individual development projects, and the Hub HSD.

---

1 The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

2 Prevision Design, *Shadow Analysis Report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD) EIR*, February 11, 2019.

3 Prevision Design. 2019. Memorandum to Alana Callagy, San Francisco Planning Department. "Changes in Hub Plan shadow due to proposed zoning height modification of 170 Otis Street." April 22, 2019.

4 Prevision Design. 2019. Memorandum to Alana Callagy, San Francisco Planning Department. "Changes in shadow effects of the revised 30 Van Ness Avenue Project on Civic Center Plaza relative to the prior version of the 30 Van Ness Avenue Project analyzed in the Shadow analysis report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD) EIR (February 11, 2019)." June 5, 2019.

ENVIRONMENTAL SETTING

In an urban environment, shadow is a function of the height, size, and massing of buildings, as well as other elements of the built environment, and the angle of the sun. The angle of the sun varies with the time of day (from rotation of the earth) and the change in seasons (from the earth's elliptical orbit around the sun and its tilted axis). The longer midday shadows are cast during the winter (when the midday sun is lowest in the sky), and the shorter midday shadows are cast during the summer (when the midday sun is higher in the sky). At the time of the summer solstice (approximately June 21 of every year), the midday sun is highest in the sky. The longest day and shortest night occur on this date. Conversely, the shortest day and longest night occur on the winter solstice (approximately December 21 of every year). The vernal/autumnal equinoxes (when day and night are equal in length) represent the halfway point between solstices. Therefore, measuring shadow lengths during the summer and winter solstices captures the extremes for the shadow patterns that occur throughout the year.

The difference between the current levels of shading and the levels that would be present with the addition of a project yields the total annual increase, measured in square foot hours (sfh) of shadow. This increase is taken as a percentage of the existing total annual available sunlight in the park or open space (i.e., the amount of sun that would fall on the park or open space throughout the year if there were no shading present at any time) and used to determine the existing versus relative increase in new shadows created by a project.

AFFECTED PUBLICLY ACCESSIBLE OPEN SPACES

There are several parks, recreational facilities, and open spaces in the vicinity of the Hub Plan area, as shown in **Figure 3.F-1**. As discussed in more detail below, the total area within which net new shadow would be cast by the Hub Plan, two individual development projects, and Hub HSD would extend from near the intersections of Fillmore Street/Waller Street to the southwest, Eddy Street/Webster Street to the northwest, Mission Street/Fifth Street to the northeast, and Brannan Street/Eighth Street to the southeast. Within the area, there are a total of 18 publicly accessible open spaces under the jurisdiction of the San Francisco Recreation and Park Department (RPD), City and County of San Francisco Real Estate Division (SFRED), San Francisco Public Works (public works), San Francisco Unified School District (SFUSD), as well as privately owned public open spaces (POPOS). The following includes a description of each of the open spaces affected by net new shadows as a result of the Hub Plan and the existing shadow conditions at each park.

Source: PreVision Design, 2019.

Figure 3.F-1
Map of Affected Parks and Open Spaces

This Page Intentionally Left Blank

Jefferson Square Park (Location 1). Jefferson Square Park is a 5.64-acre (245,779-square-foot [sf]) public park under the jurisdiction of the RPD. The urban park, located in the Western Addition neighborhood, is bounded by Eddy Street to the north, Turk Street to the south, Gough Street to the east, and Laguna Street to the west. It is not fenced, but the official hours of operation are from 5 a.m. to 12 a.m. (midnight). The park contains grassy and landscaped areas, paved walkways and stairs, eight benches, areas for active and passive uses, and centrally located off-leash dog play areas. The terrain slopes uphill to the northern side the park and is primarily composed of open grassy areas punctuated by approximately 80 trees, which range from saplings to fully mature with dense canopies. The center of the park features a small plaza, and public entrances and exits are located on each of the four corners of the park as well as mid-block on the northern and southern frontages. At the southern entrances, pathways branch out in three directions, diagonally bisecting the lower half of the park and running parallel to the public sidewalks along Laguna, Turk, and Gough streets. The pathways stemming from the northern entrances run parallel to the public sidewalks.

Under current conditions, the park receives 12,285,411 annual sfh of shadow. Based on a calculated theoretical annual available sunlight (TAAS) of 914,640,537 sfh, Jefferson Square Park's existing annual shadow load is 1.3432 percent of its TAAS.[5] Existing shadow patterns include early morning shadow cast on the eastern half of the park and late afternoon/evening shadow cast along the western edge, with little to no midday shadow year-round.

Margaret Hayward Playground (Location 2). Margaret Hayward Playground is a public park under the jurisdiction of the RPD. The 5.04-acre (219,632 sf) urban park, located in the Western Addition neighborhood, is bounded by Turk Street to the north, Golden Gate Avenue to the south, Gough Street to the east, and Laguna Street to the west. The official hours of operation are from 8 a.m. to 8 p.m. The park features include two tennis courts in the northwest corner of the park, two baseball/softball fields covering the eastern half of the park, and a children's playground in the southwest corner. Along the southern edge of the park, there is a grassy area with six fixed benches adjacent to the playground, a multipurpose hard-court area for basketball and/or soccer and other landscaped areas, paved walkways, and stairs. A historic clubhouse building used for after-school programs is located between the children's play area and the tennis courts. Six gated park entries are located in two locations along Turk Street, Laguna Street, and Golden Gate Avenue, respectively.

---

5 In San Francisco, shadow is quantitatively measured, in units called square foot hours, by multiplying the area of the shadow by the amount of time the shadow is present on the open space. Determining the annual net new shadow load generated by a project begins with a calculation of the number of square foot hours, summed over the course of a year, that sunlight would theoretically fall on a qualifying publicly accessible open space each day from an hour after sunrise to an hour before sunset, ignoring shadow from all sources. This total is referred to as the theoretical annual available sunlight.

Under current conditions, the park receives 119,743,771 annual sfh of shadow. Based on a calculated TAAS of 817,340,694 sfh, Margaret Hayward Playground's existing annual shadow load is 14.65 percent of its TAAS. Existing shadow patterns include longer early morning shadow cast on the eastern half of the park as well as over the tennis courts (cast by a private structure located mid-block) and late afternoon/evening shadow cast along the western edge of the space. Midday shadows are lesser and primarily cast by the mid-block structures as well as other smaller structures within the park itself.

Buchanan Street Mall (Location 3). The Buchanan Street Mall is a six-block public greenway under the jurisdiction of the RPD. Located in the Western Addition neighborhood, the greenway extends over six blocks and is bisected into five separate sections by Fulton Street, McAllister Street, Golden Gate Avenue, and Turk Street. The Buchanan Street Mall has a combined area of 1.81 acres (78,926 sf). The mall is not fenced; however, the official hours of operation are from 5 a.m. to 12 a.m. (midnight). The mall features a paved promenade that winds between raised feature areas, some of which are grass, trees and/or landscaping, and three of which contain enclosed children's playgrounds. The portion of the mall running between McAllister Street and Golden Gate Avenue borders and gives access to the Ella Hutch Hill Community Center.

Under current conditions, the park receives 76,753,027 annual sfh of shadow. Based on a calculated TAAS of 293,714,171 sfh, Buchanan Street Mall's existing annual shadow load is 26.13 percent of its TAAS. Existing shadow patterns year-round involve the majority of the park in shadow early and again late in the day with little to no shadows falling around midday.

Ella Hill Hutch Center (Location 4). Ella Hill Hutch Community Center is a publicly accessible community recreational facility under the jurisdiction of SFRED. The community center is located on a 2.34-acre (102,094 sf) site located in the Western Addition neighborhood. It is bounded by Golden Gate Avenue to the north, McAllister Street to the south, the Buchanan Street Mall to the east, and Webster Street to the west. The northwest corner of the site contains a landscaped entry plaza area, with paved winding pathways connecting the sidewalks on Golden Gate Avenue and Webster Street to the community center building. The paths are interspersed with grassy areas, approximately six trees, and 14 fixed benches and six fixed park tables. The grounds surrounding the community center building contain multipurpose paved play areas and a children's play structure. On the northeast corner of the site are four tennis courts surrounded by tall fencing. The eastern edge of the site borders the Buchanan Street Mall.

The Ella Hill Hutch Center is under the jurisdiction of SFRED. Existing shadow patterns include early morning shadow falling over most portions of the park from the community center building and other buildings to the east and late afternoon/evening shadow cast again by the community center building as well as development to the west. The park experiences little to no midday shadow year-round. Since this public open space is not under the jurisdiction of RPD, neither quantitative shadow calculations nor use observation visits were conducted.[6]

Hayes Valley Playground (Location 5). Hayes Valley Playground is a public park under the jurisdiction of the RPD. The 0.61-acre (26,589 sf) urban park, located in the Western Addition neighborhood, is bounded by Hayes Street to the north, Linden Street to the south, and Buchanan Street to the west. The park is fenced and posted hours of operation are from 7:30 a.m. to 9:30 p.m. Public entrances to the park are located at the northwest corner at the intersection of Hayes and Buchanan streets, the southeast corner on Linden Street, and on the north side along Hayes Street. Centrally located accessible ramps connect upper and lower terraces and can be reached via any of the park entrances.

Hayes Valley Playground rests on a terraced site with a clubhouse, playground areas, exercise equipment, and basketball/tennis courts. Several trees with dense canopies line the park along both Hayes and Linden streets. On the western (upper) level of the park, there are two designated playground areas, one for older vs. younger children with playground equipment and poured rubber paving. Also on this level is a 2,500 sf clubhouse with a stage and plaza area. A full-size basketball and tennis court occupy the eastern (lower) half of the park. Several exercise stations exist between sport courts and playground equipment. There are multiple strength training stations, pull-up bars, and stationary elliptical machines.

Under current conditions, the park receives 32,936,946 annual sfh of shadow. Based on a calculated TAAS of 98,948,423 sfh, Hayes Valley Playground's existing annual shadow load is 33.29 percent of its TAAS. Existing shadow patterns include early morning shadow falling over most portions of the park from the clubhouse building and other buildings to the east and late afternoon/evening shadow cast again by the clubhouse building as well as development to the west. The park experiences little midday shadow over summer months, with some additional shadow encroaching from buildings to the south over spring, fall, and winter months.

Koshland Community Park (Location 6). The Koshland Community Park is a public park under the jurisdiction of the RPD. The 0.82-acre (35,743 sf) urban park, located in the Western Addition neighborhood, occupies the northwest corner of the block and is bounded by Page Street to the north, Buchanan Street to the west, and private development along its eastern and southern borders. The park is not fenced, and the posted hours of operation are from sunrise to sunset. Entrances to Koshland Community Park are through a gate and stairs on Page Street as well as several points along Buchanan Street. The pathway diagonally bisects the upper and lower halves of the park. A half-court basketball area and playground sit on the Koshland Community Park's highest elevation and a community garden which can be accessed via terraced steps, a serpentine

[6] As discussed in further detail below (Regulatory Framework), section 295 of the planning code, the Sunlight Ordinance, protects certain public open spaces from shadowing by new structures. Public open space not under the jurisdiction of RDP does not require quantitative analysis.

pathway, or several steps through the Page Street entrance occupies the sites eastern most border. A playground area featuring jungle gym and sand pit is centrally located in the park, which includes a tire swing, slide, and monkey bars. A community garden with vegetables, flowers and shrubbery occupies the eastern border of the park.

Under current conditions, the park receives 20,546,822 annual sfh of shadow. Based on a calculated TAAS of 133,014,951 sfh, Koshland Community Park's existing annual shadow load is 15.45 percent of its TAAS. Existing shadow patterns include very low levels of shadow falling throughout most of the day until late afternoon, when the western half of the park is cast in shadow. Spring and fall follow a similar pattern with most shadow falling over winter months.

John Muir Elementary School (Location 7). The John Muir Elementary School is a public school under the jurisdiction of SFUSD. As a participant in the SF Shared Schoolyard program, its approximately 0.47 acre (20,300 sf) of outdoor playground area is made open to the public on weekends between 9 a.m. and 4 p.m. The playground stretches north-south between Oak and Page streets, and is bounded by the main school building on the west and residential development to the east. The playground is bounded on all sides by buildings, walls, and fences, with the only publicly-accessible point of public entry being along Page Street. The playground is paved except for a few areas of landscape planting, with a full basketball court located in the center of the space surrounded by other multi-use courts. On the northern half of the playground are two children's play structures and on the southern portion of the playground is a seating area with fixed picnic tables as well as a small vehicle parking area.

Under current conditions, the John Muir Elementary School Playground is partially shaded during morning hours from development to the east, substantially unshaded throughout midday hours with progressive shading throughout the afternoon from the main school building. Since this public open space is not under the jurisdiction of RPD, neither quantitative shadow calculations nor use observation visits were conducted.

Page and Laguna Mini Park (Location 8). Page and Laguna Mini Park is a 6,600 sf urban park located in the Western Addition neighborhood and is under the jurisdiction of the RPD. It is located mid-block with residences east and west and is bounded by Page Street to the north and Rose Street to the south. Page and Laguna Mini Park is enclosed by fences, one along Rose Street and another that bisects the site from east to west. Posted signage indicates that the park hours are from 6 a.m. to 10 p.m. The mini park has two entrances, one on Page Street and one on Rose Street. The entrances are connected by a path, creating a pedestrian connection between the two streets. The mini park features two fixed benches, a designated community gardening area, and several trees ranging in size from small shrubbery to deciduous trees with larger canopies.

Under current conditions the park receives 12,469,084 annual sfh of shadow. Based on a calculated TAAS of 24,543,248 sfh, Page and Laguna Mini Park's existing annual shadow load is

50.80 percent of its TAAS. Existing shadow patterns include morning, afternoon, and evening shadow falling over the majority the park with little shadow around midday, year-round.

Patricia's Green (Location 9). Patricia's Green is a public park under the jurisdiction of the RPD. The 0.41-acre urban park, located in the Western Addition/Hayes Valley neighborhood, extends generally north-south and is bounded by Octavia Street to the east and west, Hayes Street to the north, and Fell Street to the south. The park is divided into three sections. In the northern section of the park there is a picnic seating area located along Hayes Street. It features a plaza with four picnic tables around a mature tree and a mix of wooden and concrete benches. Two additional picnic tables are located on the western side of this area along Octavia Street next to restaurants. The central section is located where the park intersects Linden Street. It contains a circular plaza with four concrete benches and eight bollards, and functions as the area for art installations. To the north and south of the center plaza are lawns. The southern section of the park contains a children's play area, which features a dome structure with ropes and bars for climbing and poured rubber safety paving. Low concrete square pillars delineate the play area and lawn, and a metal fence encloses the Fell Street side. A service building is located at the southwest corner of the park. On the periphery of the park are concrete ledges and benches interspersed with approximately 24 trees and plantings.

Under current conditions the park receives 12,029,525 annual sfh of shadow. Based on a calculated TAAS of 66,622,661 sfh, Patricia's Green's existing annual shadow load is 18.06 percent of its TAAS. The park currently experiences higher levels of shading in the early mornings and late afternoons but is otherwise predominantly unshaded from late morning through mid-afternoon year-round.

McCoppin Hub (Location 10). McCoppin Hub is a 0.1-acre (4,554 sf) open space under the jurisdiction of public works.[7] McCoppin Hub extends east-west at the cul-de-sac where McCoppin Street terminates at the Central Freeway, and it is bounded by Valencia Street to the east. McCoppin Hub fronts Valencia Street with a secondary entrance via a path off Market Street. The daily hours of operation are 8 a.m. to 10 p.m. McCoppin Hub features seating, palm trees, light landscaping, and landings for food trucks, art/craft display tables, and tents for live music performances. Seating is located within the middle area and is composed of seven raised planters with ledges, shrubs, and palm trees, and five two-seat benches. A bench is fixed to the five middle-raised planters, with the placement of each bench alternating from the north to the south end, starting at Valencia Street and extending toward the Central Freeway. The west end, on the edge of the Central Freeway, features a lightly landscaped area with shrubs and three trees.

Existing shadow patterns include substantial to complete early morning shadow cast across the park, with lesser midday shadow then shadows encroaching from the west in afternoon, year-

[7] As of winter 2019 the open space was fenced off from public access by temporary fencing. The description contained here assumes that temporary fencing is not in place.

round. Because this public open space is not under the jurisdiction of RPD, neither quantitative shadow calculations nor use observation visits were conducted.

SoMa West Skate and Dog Park (Location 11). The SoMa West Skate and Dog Park is a 0.68-acre (29,528 sf) publicly accessible open space under the jurisdiction of public works. The park spans east-west between Valencia Street to the west and Otis Street to the east. The park is physically divided into two sections by Stevenson Street, the western portion is designated as a dog park and the eastern portion a skateboard park. Both sections are fenced, with daily hours of operation for the Dog Park being 5 a.m. to midnight and 9 a.m. to 9 p.m. for the skate park. The dog play area is composed of two separated areas, a smaller section designed for little dogs and a longer, larger section intended for bigger dogs. The skateboard portion of the park is entirely paved with concrete and sculpted for use by skateboarders. There are six large circular freeway support pillars in the skateboard area covered by murals.

Because of the park's location under an elevated freeway, existing shadow patterns include substantial shadow cast across the park during midday hours year-round, with partial sunlight cast in the early mornings and late afternoons. Since this public open space is not under the jurisdiction of RPD, neither quantitative shadow calculations nor use observation visits were conducted.

Future Brady Park (Location 12). The future Brady Park is a proposed POPOS that would be created as part of the 1629 Market Street Project. The park (along with connected public passages) would be approximately 0.46 acre (20,000 sf) in size at the corner of Brady and Colton streets, and to the south and west of the four proposed buildings that would compose the 1629 Market Street Project. The programming of the park calls for large areas of hardscape (pavers), interspersed with succulent gardens, landscape planting, sculpture, seating walls and other movable seating, a youth play structure and play surface, bike parking, and pedestrian access pathways through the project to Market and 12th streets.

The park will be surrounded on all sides by nearby buildings, which would cast shadows on the park in the early morning and in the afternoon with lower levels of shadow over the midday hours, year-round. The timing of construction is not known at this time. Since this publicly-accessible open space is not under the jurisdiction of RPD, quantitative shadow calculations were not conducted.

Civic Center Plaza (Location 13). Civic Center Plaza (also referred to as the Joseph L. Alioto Performing Arts Piazza) is a public park under the jurisdiction of the RPD. The 4.43-acre (192,933 sf) urban park, located in the Civic Center neighborhood, is west of San Francisco City Hall and bounded by McAllister Street to the north, Larkin Street to the east, Polk Street to the west, and Grove Street to the south. The plaza is not fenced, but the official hours of operation are from 5 a.m. to midnight. Approximately half of the plaza area is paved, but these areas are interspersed with rectangular lawns as well as an unpaved (dirt) section at the center of the park. To the north and south of this central dirt section are approximately 200 small, densely spaced, but highly pruned trees. Approximately 10 larger trees are present in the southeastern corner of the park, and 8 similar trees are located in the northeastern portion of the park. Two recently renovated fenced-in children's play areas (known as the Hellen Diller Civic Center Playground) are located in the plaza; one is at the northeast corner and is for smaller children, and the other is at the southeast corner and is designed for older children. Both play areas contain poured rubber paving and play equipment as well as benches. The southern portion of the park contains a small rectangular area with some landscaping, as well as a bench wall used for seating. A café kiosk opened in 2018 in the southeast corner of the park with a small outdoor seating area on the east side. There is no formal entrance to Civic Center Plaza; most users enter at one of the four corners, or at the center along the Polk and Larkin Street frontages.

Under current conditions the park receives 84,652,671 annual sfh of shadow. Based on a calculated TAAS of 829,854,584 sfh, Civic Center Plaza's existing annual shadow load is 10.20 percent of its TAAS. Existing shadow patterns include early morning shadow falling across the eastern portion of the park and late afternoon/evening shadow cast from the western edge, with little to no midday shadow except over winter months, when shadows encroaching from the south are cast on the southern edge of the park.

Future 11th/Natoma Park Site (Location 14). In 2017 RPD acquired a property on 11th Street between Minna and Natoma streets. The site is currently occupied by buildings that would be demolished as part of converting this site to a future park. The programming of the park, environmental review, permitting, and timing of construction are not known at this time, but the site for this contemplated future park is analyzed quantitatively and graphically in this section because it is under the jurisdiction of RPD. The analysis is included for informational purposes.

Under current conditions the location of the proposed future park would receive (assuming the removal of existing buildings on site and full use of the site for a park) 16,085,624 annual sfh of shadow. Based on a calculated TAAS of 72,829,287 sfh, the 11th/Natoma Park Site's existing annual shadow load would be 22.09 percent of its TAAS. Existing shadow patterns include early morning and later afternoon shadow falling over the majority of the park, with little to no midday and early afternoon shadow year-round.

United Nations Plaza (Location 15). United Nations Plaza is a 2.35-acre (102,227 sf) urban plaza under the jurisdiction of public works and located in the Downtown/Civic Center neighborhood on the former Fulton and Leavenworth street roadway sites. The unfenced plaza is bounded by McAllister Street to the north, Market Street to the south, Charles J. Brenham Place to the east, and Hyde Street to the west. The plaza is irregularly shaped but has two principal axes: the east–west axis visually connects San Francisco City Hall with Market Street; a shorter north–south axis connects links Leavenworth Street to Market Street. The plaza consists of a wide brick-paved area, which is punctuated by raised planting areas with mature trees. Near the center of the plaza, there is a terraced area with a sculptural fountain. On the western corner of the plaza as well on the southern side are entrances to the underground Civic Center BART and Muni stations.

Under current conditions, shadow patterns include early morning and later afternoon shadow falling over the majority of the plaza with little to no midday and early afternoon shadow year-round. Since this publicly-accessible open space is not under the jurisdiction of RPD, quantitative shadow calculations were not conducted.

Howard and Langton Mini Park (Location 16). Howard and Langton Mini Park is a public park/community garden under the jurisdiction of the RPD. RPD supports this space as one of 38 community gardens throughout the city as part of the Community Gardens Program.[8] The 0.2-acre (9,204 sf) urban park located in the South of Market (SoMa) neighborhood and is bounded by Howard Street to the northwest, Langton Street to the northeast, and private residential buildings on the other two sides. Inside the garden are many raised planting beds separated by walking aisles. The park is secured by a tall fence with a locked gate on Langton Street near the corner of Howard Street. Access is restricted to community garden members or access for others by appointment.

Under current conditions the park receives 15,600,472 annual sfh of shadow. Based on a calculated TAAS of 38,026,625 sfh, Howard and Langton Mini Park's existing annual shadow load is 41.025 percent of its TAAS. Existing shadow patterns include early morning and later afternoon shadow falling over the majority of the plaza with little to no midday and early afternoon shadow year-round.

Gene Friend Recreation Center (Location 17). Gene Friend Recreation Center (formerly known as South of Market Park) is a public park under the jurisdiction of RPD. The 1.02-acre (44,351 sf) urban park, located in the SoMa neighborhood, occupies approximately half of the block bounded by Sixth Street to the northeast, Folsom Street to the southeast, Howard Street to the northwest, and Harriet Street to the southwest. The park is fenced, and although the daily hours of operation vary, the park is not open prior to 9 a.m. nor after 9 p.m. The park contains a sand-floor playground, a basketball court, lawn, and a recreation center that houses a gymnasium, activity room, and auditorium. There are entrances from Folsom and Harriet streets, and an entrance through the recreation center from Sixth Street. The basketball court and gymnasium are located in the northwest section of the park, with palm trees and benches lining the southwest edge of the court.

Under current conditions the park receives 79,707,759 annual sfh of shadow. Based on a calculated TAAS of 165,049,284 sfh, Gene Friend Recreation Center's existing annual shadow load is 48.2933 percent of its TAAS. Existing shadow patterns include early morning and later

[8] San Francisco Recreation and Parks, Howard & Langton Mini Park Community Garden, *https://sfrecpark.org/destination/howard-langton-mini-park/*, accessed February 28, 2019.

afternoon shadow falling over the majority of the park with little to no midday and early afternoon shadow cast on open areas of the park year-round.

Victoria Manalo Draves Park (Location 18). Victoria Manalo Draves Park is a public park under the jurisdiction of RPD. The 2.53-acre (109,997 sf) urban park, located in the SoMa neighborhood, is bounded by Folsom Street to the northwest, Harrison Street to the southeast, Columbia Square to the northeast, and Sherman Street to the southwest. The park is enclosed by a 5-foot tall fence and locked at night. The stated hours of operation for Victoria Manalo Draves Park are from sunrise to sunset, 365 days per year. Victoria Manalo Draves Park's primary public entrance is located on the corner of Folsom Street and Columbia Square. The park includes walkways, a basketball court, a community garden, a ball field, and two children's play areas.

Under current conditions the park receives 26,337,361 annual sfh of shadow. Based on a calculated TAAS of 409,342,836 sfh, Victoria Manalo Draves Park's existing annual shadow load is 6.43 percent of its TAAS. Existing shadows are cast by buildings surrounding the park on all 4 sides, with the southern and eastern sides of the park cast in shadow during morning hours, few shadows throughout the midday hours, with increasing shadows entering the park's western and northern sides in the afternoon.

REGULATORY FRAMEWORK

There are no specific federal or state regulations relating to solar access (sunlight, not photo-voltaic/solar panel) or shadow effects, but there are several local code provisions, policies, and procedures that regulate shadow, as detailed below.

SAN FRANCISCO GENERAL PLAN

Recreation and Open Space Element. The Recreation and Open Space Element of the City of San Francisco General Plan (1996) includes Policy 2.3, which requires that solar access to public open space be protected. The policy promotes protecting solar access and avoiding shade to maintain the usability of public open space, and states that the requirements of San Francisco Planning Code section 295 (discussed in detail below) apply to the review of projects that could shade RPD property.

Urban Design Element. Policy 3.4 in the general plan's Urban Design Element calls for the promotion of building forms that would respect and improve the integrity of open spaces and other public areas. Buildings to the south, east, and west of parks and plazas are to be limited in height or effectively oriented so as not to prevent the penetration of sunlight to such parks and plazas. Where feasible, large buildings and developments are to have ground-level open space that is well situated for public access and sunlight penetration.

PLANNING CODE SECTION 101.1 – GENERAL PLAN CONSISTENCY AND IMPLEMENTATION

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added section 101.1 to the planning code and established eight priority policies. These priority policies are the basis upon which inconsistencies in the general plan are resolved. Priority policy number 8 calls for the protection of parks and open space, and their access to sunlight and vistas.

Before issuing a permit for any project that requires an initial study under the California Environmental Quality Act (CEQA), or for any demolition, conversion, or change of use, and before taking any action that requires a finding of consistency with the general plan, the City is required to find that the proposed project or legislation would be consistent with the priority policies.

PLANNING CODE SECTION 295 – SUNLIGHT ORDINANCE

Section 295 of the planning code, the Sunlight Ordinance, was adopted through voter approval of Proposition K in November 1994 to protect certain public open spaces from shadowing by new structures. Section 295 effectively limits shadow on some City parks, requiring that specific findings be made before buildings greater than 40 feet in height can be approved that would shade property under the jurisdiction of or designated to be acquired by the Recreation and Park Commission, during the period from one hour after sunrise to one hour before sunset. Section 295(b) states that the Planning Commission, following a public hearing, "shall disapprove" any project governed by section 295 that would have an "adverse effect" due to shading of a park subject to this section, "unless it is determined that the impact would be insignificant." The Planning Commission's decision under section 295 cannot be made "until the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission has had an opportunity to review and comment to the City Planning Commission upon the proposed project."

In 1989, the two commissions adopted shadow criteria for 14 downtown parks, including quantitative maximum shadow coverage ("Absolute Cumulative Limit") for each open space and qualitative criteria for assessing new shadow.[9] Although none of these 14 parks are within the Hub Plan area, Gene Friend Recreation Center (then known as SoMa Park) and Civic Center Plaza are the nearest parks to the Hub Plan area for which Absolute Cumulative Limits were established.

[9] The sunlight on a park is measured in terms of "square foot hours" of sunlight, while the shadow load is measured in terms of "shadow foot hours." A square foot hour of sunlight is one hour of sunlight on one square foot of ground, while a shadow foot hour represents one hour of shade on one square foot of ground.

OTHER PLANNING CODE SECTIONS

Planning code sections 146 and 147, both added in 1985, establish additional design guidelines for buildings in C-3 Downtown Commercial, South of Market Mixed Use, and Eastern Neighborhoods Mixed Use Districts for the purpose of limiting shadow on public sidewalks, public plazas, and other publicly accessible spaces other than those protected under section 295.

IMPACTS AND MITIGATION MEASURES

This section describes the impact analysis for the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street Project related to shadow. It describes the methods used to determine the impacts of the Hub Plan and two individual development projects, and lists the thresholds used to conclude whether an impact would be significant. It also discusses mitigation measures identified for significant impacts.

Implementation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. Designation of an HSD, through adoption of an ordinance by the San Francisco Board of Supervisors, would allow the City to exercise streamlined ministerial approval of residential and mixed-use development projects meeting certain requirements within the HSD. Qualifying projects approved under the HSD would still be required to implement applicable mitigation measures identified in this EIR and comply with adopted design review standards and all existing City laws and regulations but would not require additional CEQA analysis. Because the Hub HSD would be a procedural change that would be shown as an overlay on zoning maps, no impacts would result from implementation of the HSD beyond those identified for the Hub Plan, and this project component is not discussed further.

SIGNIFICANCE CRITERIA

The following significance criterion is from Appendix B of the San Francisco Planning Department's (department's) Environmental Review Guidelines and is used to determine the level of impacts related to shadow. The Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street Project would have a significant shadow impact if they would:

- Create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.

The criteria for determining the significance of shadow impacts in the city pursuant to CEQA and section 295 of the planning code are different. Under planning code section 295 and the joint Planning Commission/Recreation and Park Commission criteria, any shadow above the cumulative shadow limit would be "significant" in the way that the term is used in section 295. In contrast, the CEQA significance criterion for environmental review addresses a broader array of shadow-related considerations that may include not only quantitative criteria but also qualitative criteria, such as open space usage; the time of day and/or time of year that shadow would affect open space; physical layout of the affected facilities; the duration, size, shape, and location of the shadow; and the proportion of open space affected. If the department determines, based on these factors, that use and enjoyment of the park or public space would be substantially and adversely affected, the impact would be "significant," in the way that the term is used under CEQA. Therefore, in certain situations, new shadow could be significant under planning code section 295 but would not be a significant environmental impact under CEQA, and vice versa.

Compliance with section 295 of the planning code occurs independently of this EIR's analysis and evaluation of shadow impacts. The purpose of the analysis in this EIR is to provide the public and City decision makers with information that sufficiently describes the proposed project's shadow in terms of the types of parks and open spaces that it would affect, when and where the shadow would occur, what the anticipated duration of the shadow would be, and whether the shadow could substantially and adversely affect the subject parks or open spaces.

Approach to Analysis

Although Appendix G of the CEQA Guidelines does not include checklist questions related to potential shadow impacts, the City adopted standards for evaluation of shadow impacts under section 31.10 of the administrative code. The CEQA analysis for development projects in San Francisco typically relies on the technical methodology developed to demonstrate compliance with planning code section 295 as described in (1) the February 3, 1989, memorandum titled "Proposition K – The Sunlight Ordinance," and (2) the July 2014 memorandum titled "Shadow Analysis Procedures and Scope Requirements." The Recreation and Park Commission and the Planning Commission adopted criteria in 1987 and 1989 for the review of shade, solar access, and shadow effects. This analysis uses the Shadow Study prepared by Prevision Design. The following describes the standards for review of shadow under section 295, as applied by Prevision Design.

Proposed Streetscape and Street Network Improvements

The streetscape and street network improvements would be implemented entirely within existing public rights-of-way and would not involve construction of any buildings or other structures of a height or bulk great enough to result in adverse effects related to shadow. As disclosed in the initial study (see Appendix B), the proposed streetscape and street network improvements were found not to affect shadow conditions in a substantial manner. Because shadow impacts related to streetscape and street network changes would be less than significant, no further analysis is required.

Quantitative Methodology

To perform quantitative shadow calculations, Prevision Design generated a 3D virtual massing model of the urban context inclusive of all existing and proposed buildings/sites (detailed further under Modeling Assumptions below). Within one hour after sunrise through one hour before sunset (hereafter "the daily analysis period"), Prevision Design performed snapshot analyses at 15-minute intervals, repeating this process every seven days between the Summer Solstice (June 21) and Winter Solstice (December 20), with interim times and dates extrapolated to approximate shadow conditions on other days and times. This half-year period (between the Summer and Winter Solstices) is referred to by the department as a "solar year." Because the path of the sun is mirrored over the second half of the year, analysis of this half-year period allows for reasonable extrapolation to arrive at a full-year estimated shading calculation.[10]

In addition to the quantitative analysis of existing shadow conditions and the net new shadow that would be generated by the Hub Plan (including the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street), the analysis includes calculations to capture the combined shadow effects that would be generated by adding reasonably foreseeable future projects that would cast shadow on the same public open spaces affected by shadow from the Hub Plan (including the two individual development projects). These calculations are referred to as the "Cumulative Scenario."[11] Consistent with established City methodology, for parks under the jurisdiction of RPD, quantitative shadow calculations have been calculated; the general timing of net new shadow effects for other non-RPD parks and open spaces is listed.

Graphical Methodology

To provide a spatial and contextual understanding of the location, size, and features affected by net new shadow, Prevision Design has prepared shadow graphics to accompany the quantitative analysis. The complete set of figures produced by the computer modeling is included in Appendix H-1.

- **Department Shadow Fan.** The shadow fan is a tool that plots the maximum potential reach of project shadow over the course of a year (from one hour after sunrise until one hour before sunset) relative to the location of nearby open spaces, recreation facilities, and publicly accessible parks. The shadow fan accounts for topographical variation but does not account for existing shadows cast by existing buildings. The shadow fan is used by the department as the basis for initially identifying which open spaces, recreation facilities, and parks merit

---

[10] The annual percentages of existing shadow listed in this EIR may vary from those reported in past shadow analyses prepared for prior projects. The department updated technical direction regarding solar angles in 2016 and revised and re-issued geographic boundaries of many parks in 2017, both of which altered the calculated existing shadow loads of many parks. In addition, due to the large number of data samples, rounding, extrapolation, and unavoidable minor variations that occur in the software simulation process, even under identical model conditions minor discrepancies (typically under 0.05 percent) in calculated values may occur.

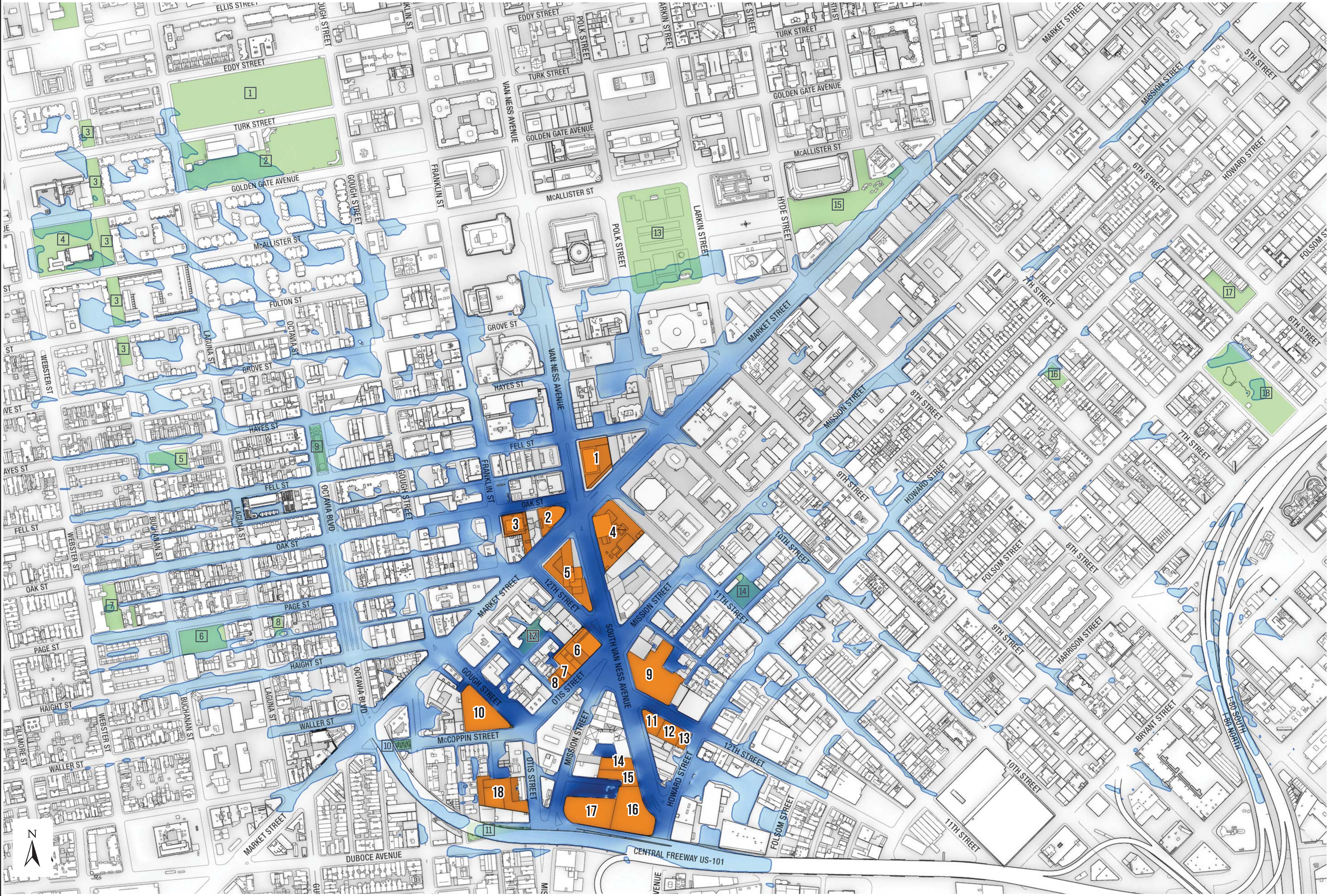
[11] This includes the assumption that the 10 South Van Ness Avenue Project would be constructed as a 590-foot single tower. For informational purposes, the 400-foot-tall, double tower project variant is analyzed under Cumulative Scenario 2 in the Shadow Study (Appendix H-1).

further study. Those that are outside the maximum potential reach of project shadow do not require further study.

- **Net New Shadow Fans.** Graphics showing the full extent of the areas receiving net new shadow at any point throughout the year, factoring out the presence of shadow cast by existing buildings. Three shadow fans (**Figures 3.F-2 through 3.F-4**, pp. 3.F-19 to 3.F-21) have been prepared as part of this analysis, depicting the Hub Plan Scenario, the 30 Van Ness Avenue Project, and the 98 Franklin Street Project.
- **Sweep Shadow Diagrams.** Appendix H-1 includes graphics showing "snapshot" shading conditions at hourly intervals over the entire affected area for the Hub Plan, 30 Van Ness Avenue, and the 98 Franklin Street scenarios. Graphics reflect shadow conditions within the daily analysis period on the Summer Solstice (June 21), the approximate equinoxes (March 22/September 20), and the Winter Solstice (December 20). Select Sweep Shadow Diagrams are included in **Figures 3.F-5 through 3.F-22**, pp. 3.F-22 to 3.F-39 (with the rest included in Appendix H-1).[12] These figures depict shadow from likely development under the Hub Plan and the Cumulative Scenario[13] for representative times of the day (9 a.m., 12 p.m., and 3 p.m.) during the four seasons. Shadows on any other day of the year would generally be within the range of shadows presented in these figures. Sweep Shadow Diagrams are also included in this section for the 30 Van Ness Avenue Project and the 98 Franklin Street Project, but only for the seasons and times when nearby parks would be affected by net new shadow from those individual development projects.
- **Detailed Shadow Diagrams.** For parks and open spaces subject to section 295, graphics are provided in Appendix H-1 showing "snapshot" shading conditions at hourly intervals within the daily analysis period on the Summer Solstice (June 21), the approximate equinoxes (March 22/September 20), and the Winter Solstice (December 20) and the date with the greatest quantitative net new shadow (if different from above). At times when the project is casting net new shadow on an open space, additional graphics are provided at 15-minute intervals. As discussed above, and consistent with standards

[12] Note that the shadow fan diagrams shown in this document reflect shadow cast by 30 Van Ness Avenue as proposed in September 2018. Because the shadow fans have not been altered to reflect this change, the figures present a more conservative scenario with respect to the shadow effects of the 30 Van Ness Avenue Project.

[13] The Cumulative Scenario is depicted in each Hub Plan figure.



Source: PreVision Design, 2019.

Figure 3.F-2
Aggregate Shadow Fan—Hub Plan

Source: PreVision Design, 2019.

ICF Graphics ... 00790.17 (6-12-2019)

Figure 3.F-3
Aggregate Shadow Fan—30 Van Ness Avenue Project

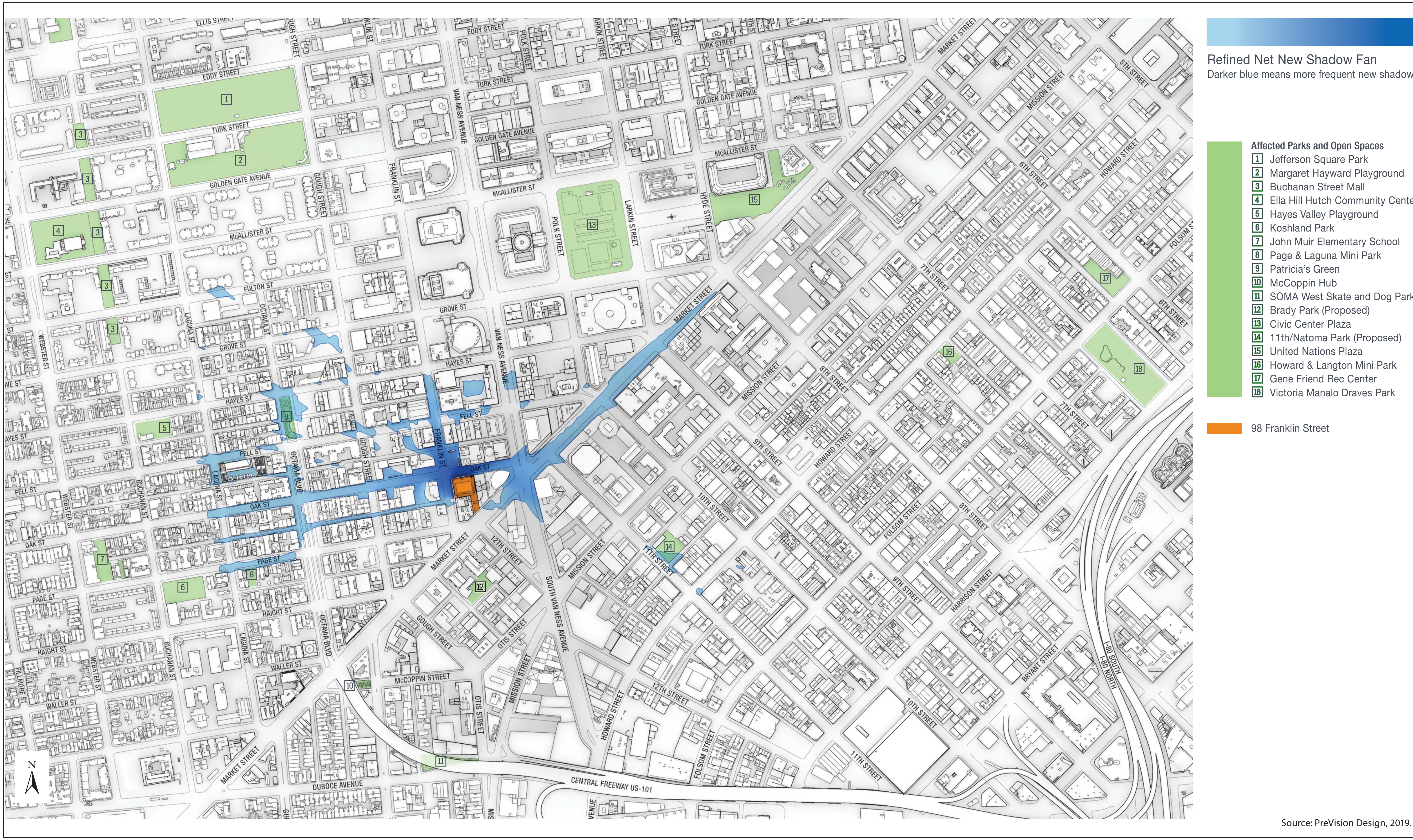
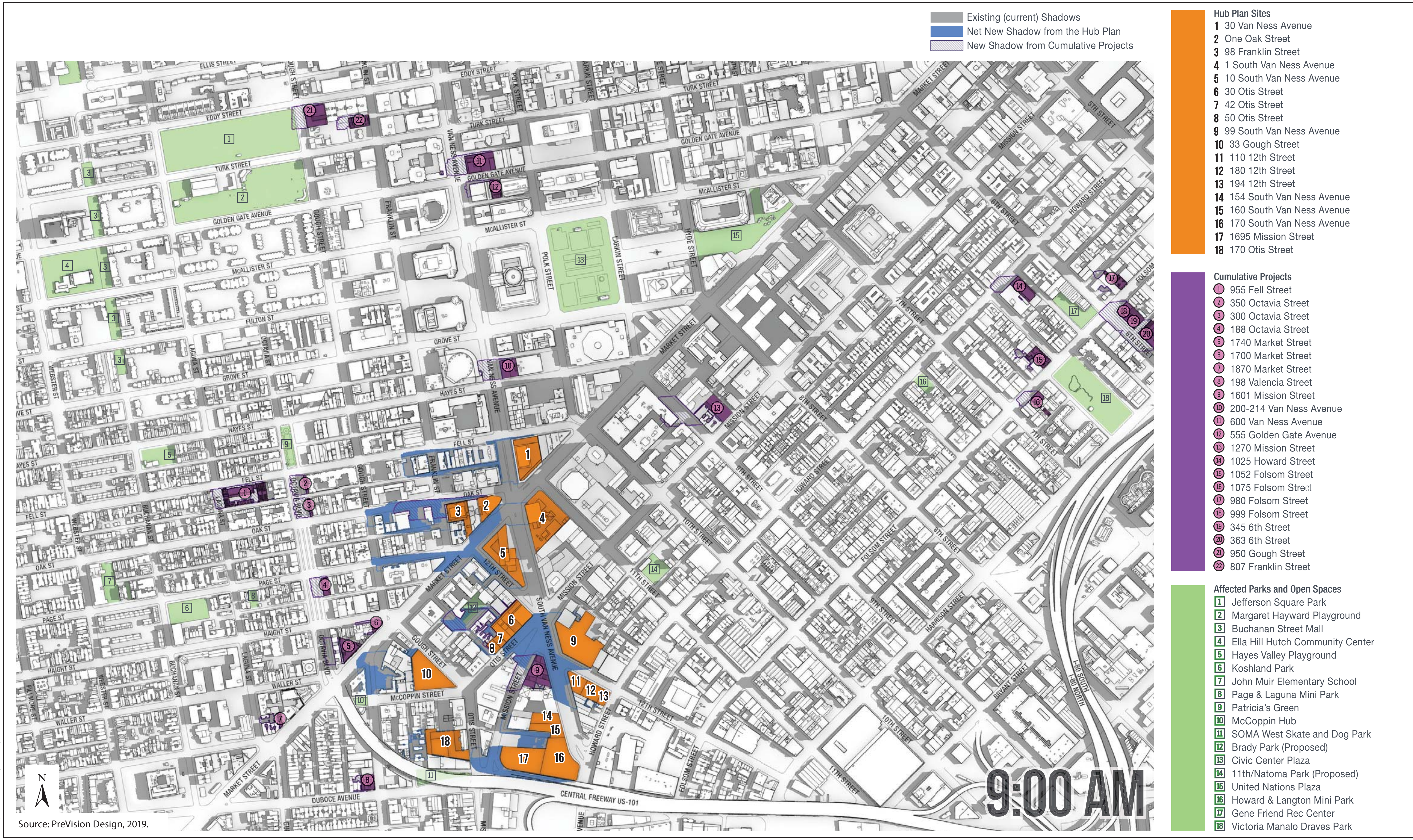
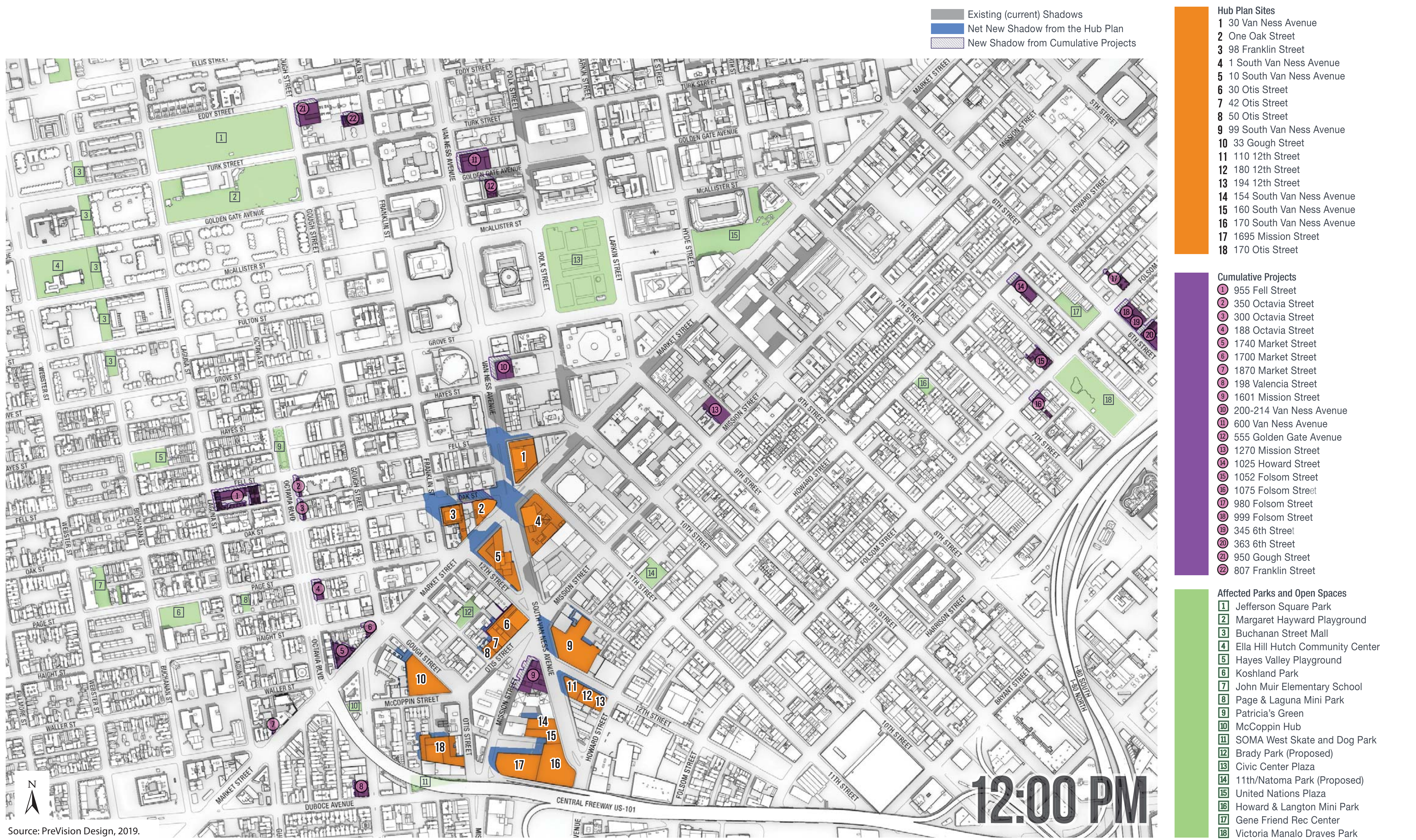


Figure 3.F-4
Aggregate Shadow Fan—98 Franklin Street Project



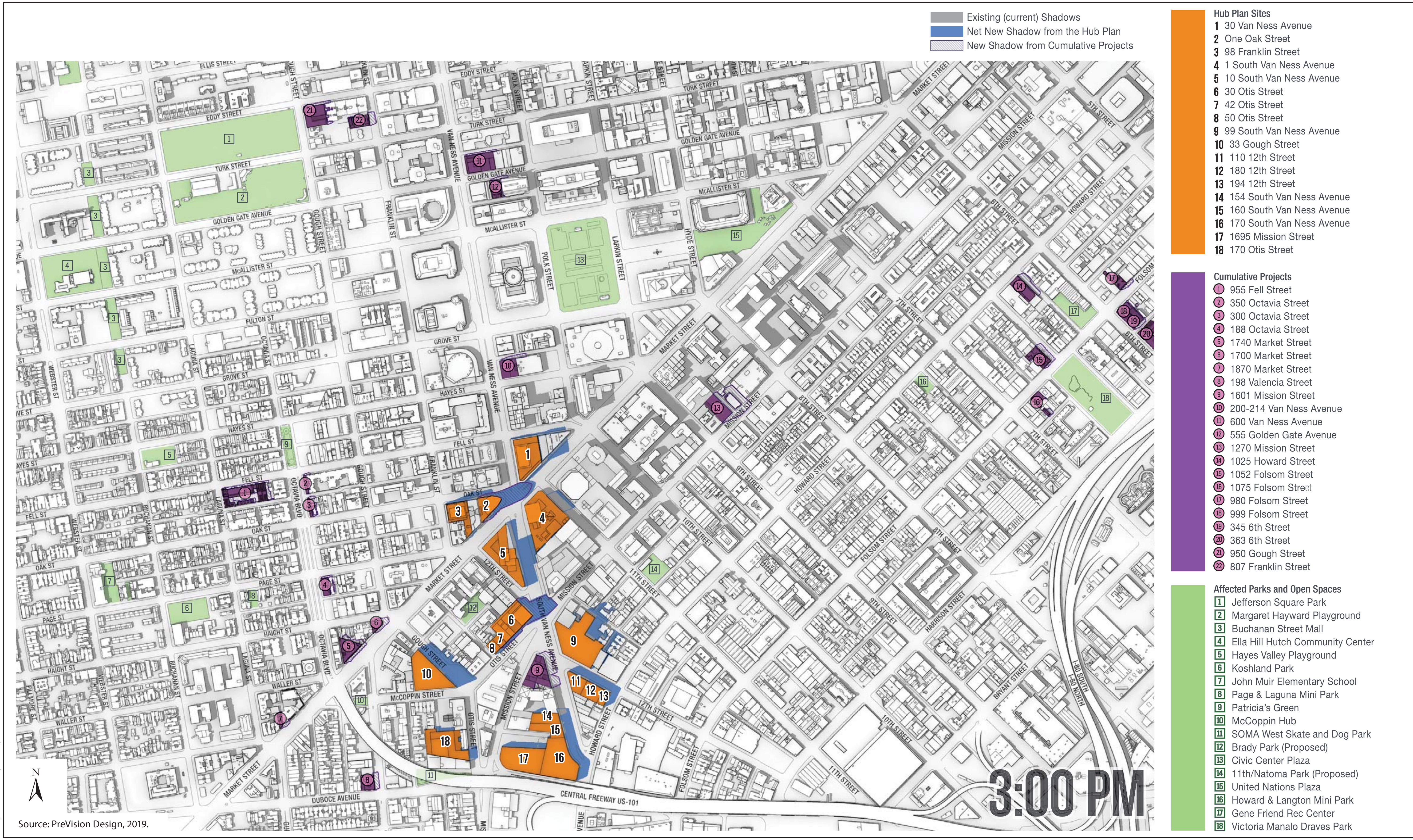
ICF Graphics ... 00700.17 (6-13-2019)

Figure 3.F-5
Hub Plan—Shadow Diagram on Summer Solstice (June 21) at 9 AM



Source: PreVision Design, 2019.

Figure 3.F-6
Hub Plan—Shadow Diagram on Summer Solstice (June 21) at Noon



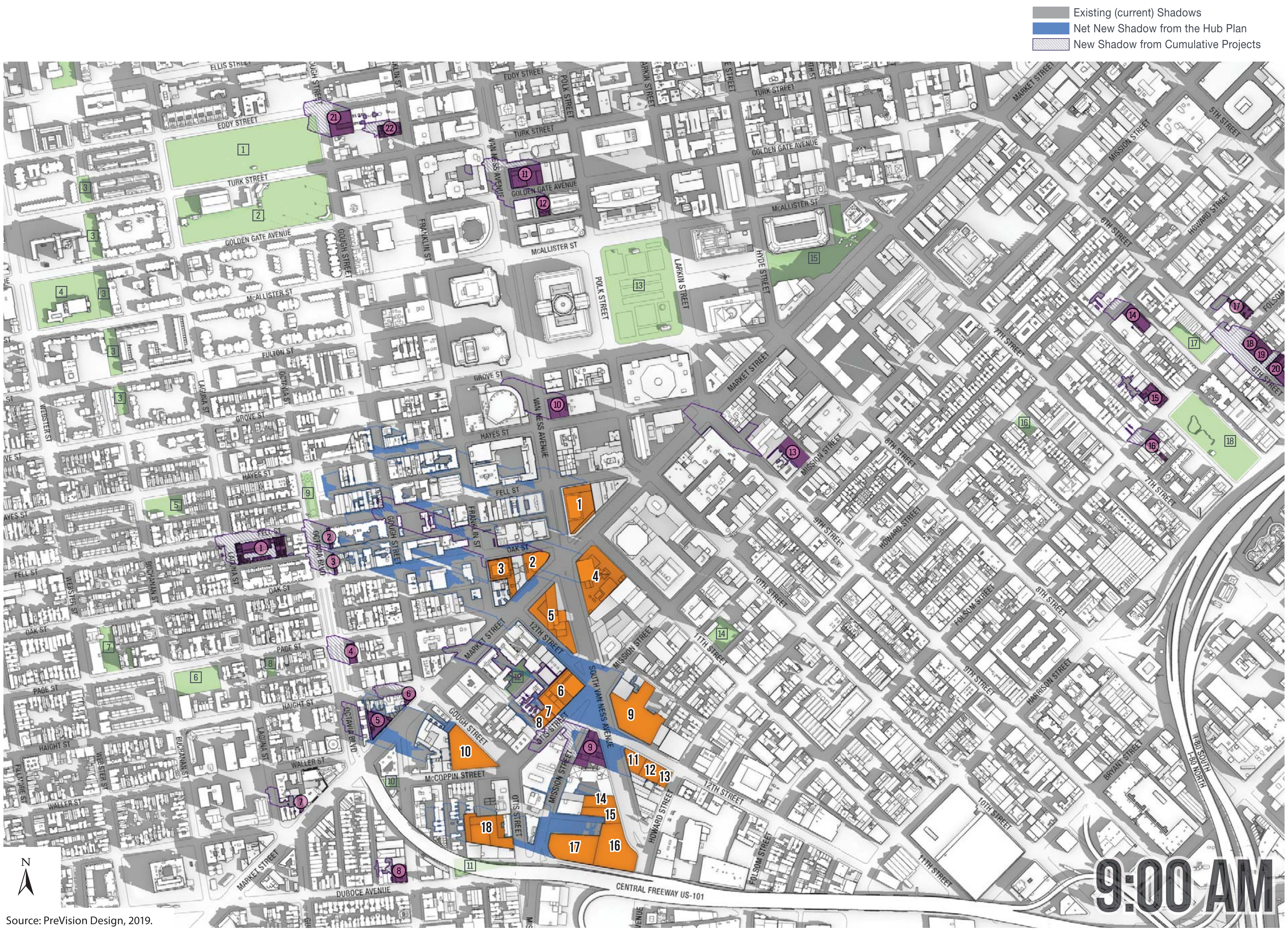
Source: PreVision Design, 2019.

ICF Graphics ... 00790.17 (6-13-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)

Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.F-7
Hub Plan—Shadow Diagram on Summer Solstice (June 21) at 3 PM



Hub Plan Sites

1. 30 Van Ness Avenue
2. One Oak Street
3. 98 Franklin Street
4. 1 South Van Ness Avenue
5. 10 South Van Ness Avenue
6. 30 Otis Street
7. 42 Otis Street
8. 50 Otis Street
9. 99 South Van Ness Avenue
10. 33 Gough Street
11. 110 12th Street
12. 180 12th Street
13. 194 12th Street
14. 154 South Van Ness Avenue
15. 160 South Van Ness Avenue
16. 170 South Van Ness Avenue
17. 1695 Mission Street
18. 170 Otis Street

Cumulative Projects

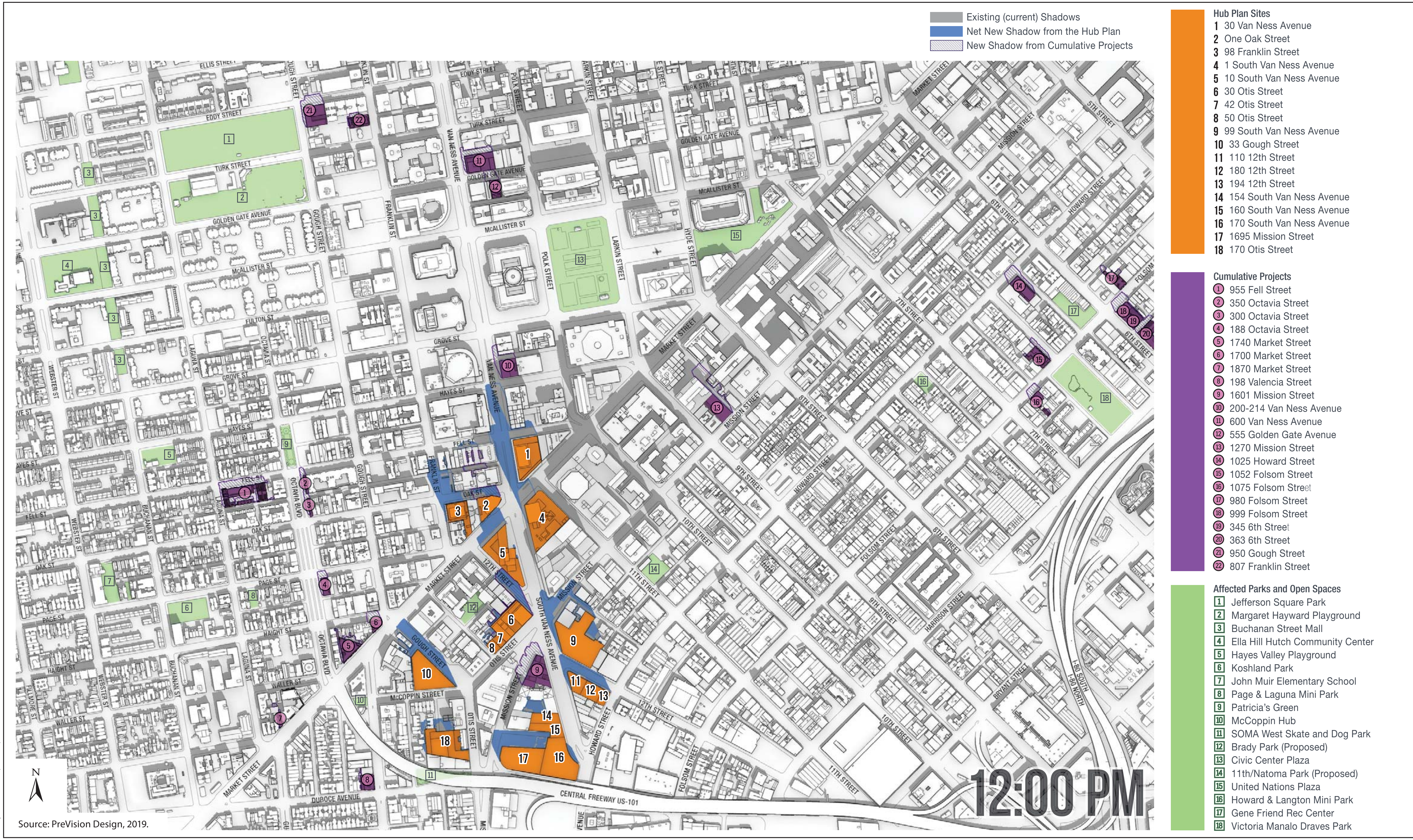
1. 955 Fell Street
2. 350 Octavia Street
3. 300 Octavia Street
4. 188 Octavia Street
5. 1740 Market Street
6. 1700 Market Street
7. 1870 Market Street
8. 198 Valencia Street
9. 1601 Mission Street
10. 200-214 Van Ness Avenue
11. 600 Van Ness Avenue
12. 555 Golden Gate Avenue
13. 1270 Mission Street
14. 1025 Howard Street
15. 1052 Folsom Street
16. 1075 Folsom Street
17. 980 Folsom Street
18. 999 Folsom Street
19. 345 6th Street
20. 363 6th Street
21. 950 Gough Street
22. 807 Franklin Street

Affected Parks and Open Spaces

1. Jefferson Square Park
2. Margaret Hayward Playground
3. Buchanan Street Mall
4. Ella Hill Hutch Community Center
5. Hayes Valley Playground
6. Koshland Park
7. John Muir Elementary School
8. Page & Laguna Mini Park
9. Patricia's Green
10. McCoppin Hub
11. SOMA West Skate and Dog Park
12. Brady Park (Proposed)
13. Civic Center Plaza
14. 11th/Natoma Park (Proposed)
15. United Nations Plaza
16. Howard & Langton Mini Park
17. Gene Friend Rec Center
18. Victoria Manalo Draves Park

ICF Graphics ... 00790.17 (6-13-2019)

Figure 3.F-8
Hub Plan—Shadow Diagram on Fall/Spring Equinoxes (September 20/March 22) at 9 AM



Source: PreVision Design, 2019.

Figure 3.F-9
Hub Plan—Shadow Diagram on Fall/Spring Equinoxes (September 20/March 22) at Noon

Source: PreVision Design, 2019.

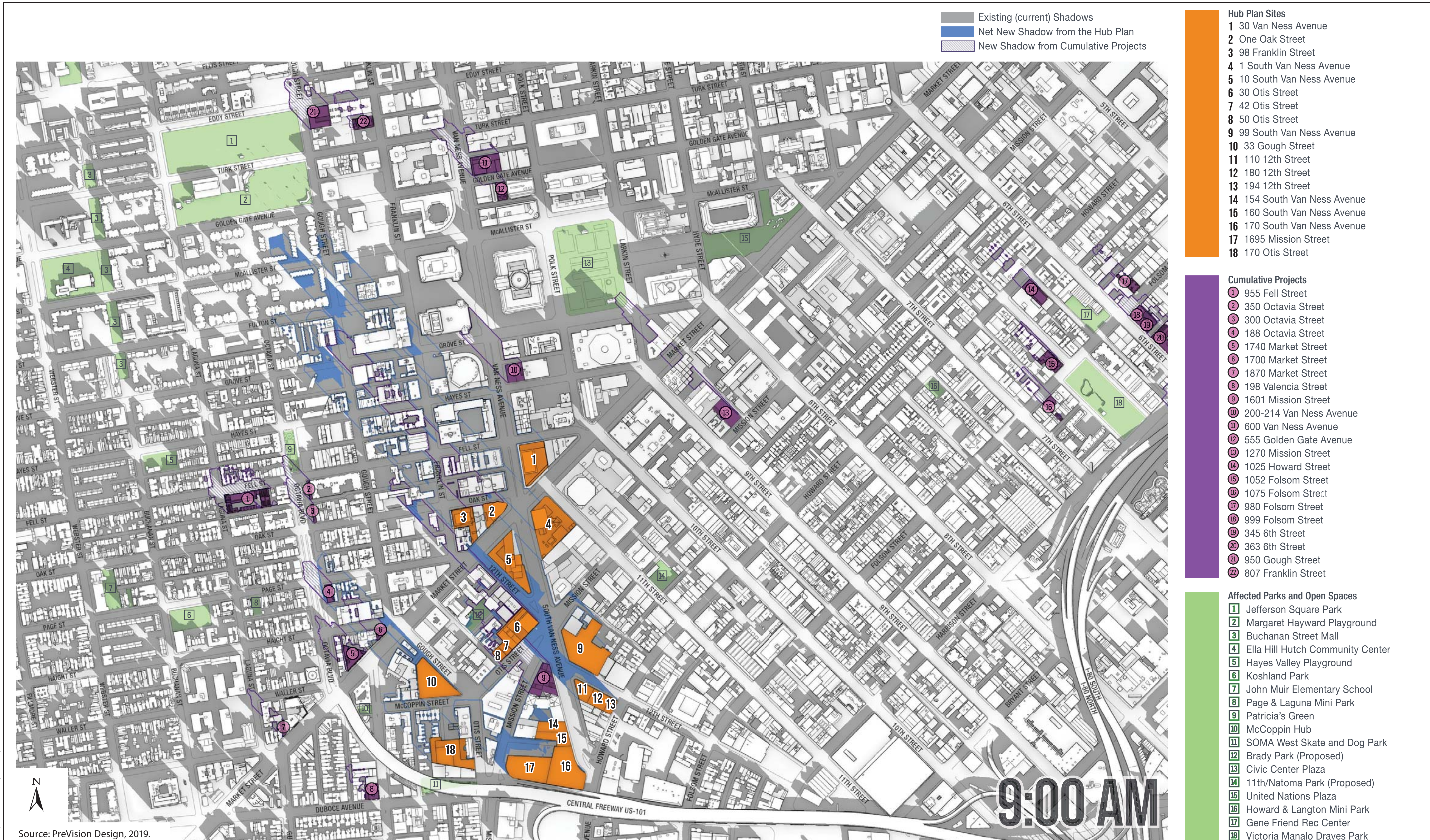
Existing (current) Shadows
Net New Shadow from the Hub Plan
New Shadow from Cumulative Projects

Hub Plan Sites
1 30 Van Ness Avenue
2 One Oak Street
3 98 Franklin Street
4 1 South Van Ness Avenue
5 10 South Van Ness Avenue
6 30 Otis Street
7 42 Otis Street
8 50 Otis Street
9 99 South Van Ness Avenue
10 33 Gough Street
11 110 12th Street
12 180 12th Street
13 194 12th Street
14 154 South Van Ness Avenue
15 160 South Van Ness Avenue
16 170 South Van Ness Avenue
17 1695 Mission Street
18 170 Otis Street

Cumulative Projects
1 955 Fell Street
2 350 Octavia Street
3 300 Octavia Street
4 188 Octavia Street
5 1740 Market Street
6 1700 Market Street
7 1870 Market Street
8 198 Valencia Street
9 1601 Mission Street
10 200-214 Van Ness Avenue
11 600 Van Ness Avenue
12 555 Golden Gate Avenue
13 1270 Mission Street
14 1025 Howard Street
15 1052 Folsom Street
16 1075 Folsom Street
17 980 Folsom Street
18 999 Folsom Street
19 345 6th Street
20 363 6th Street
21 950 Gough Street
22 807 Franklin Street

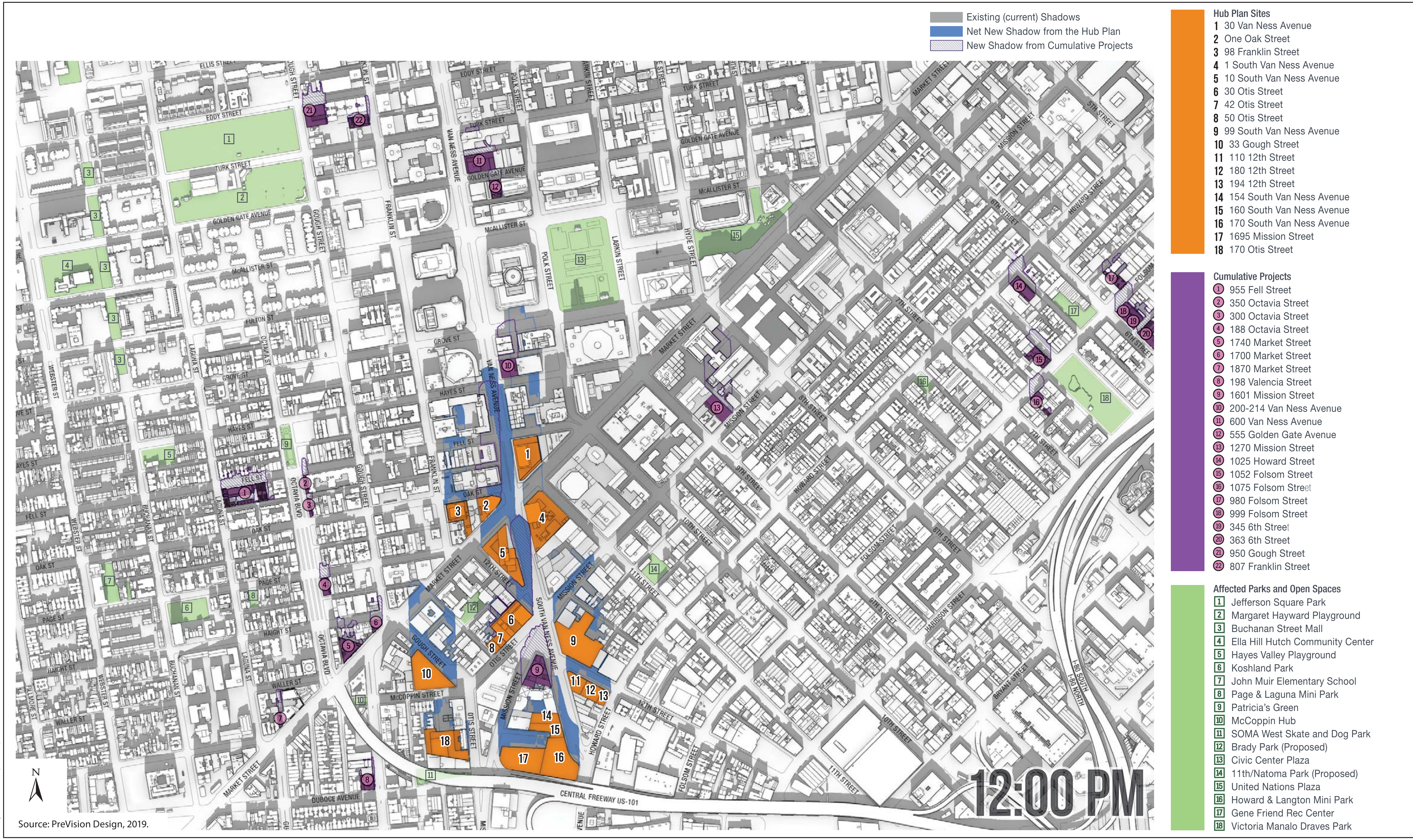
Affected Parks and Open Spaces
1 Jefferson Square Park
2 Margaret Hayward Playground
3 Buchanan Street Mall
4 Ella Hill Hutch Community Center
5 Hayes Valley Playground
6 Koshland Park
7 John Muir Elementary School
8 Page & Laguna Mini Park
9 Patricia's Green
10 McCoppin Hub
11 SOMA West Skate and Dog Park
12 Brady Park (Proposed)
13 Civic Center Plaza
14 11th/Natoma Park (Proposed)
15 United Nations Plaza
16 Howard & Langton Mini Park
17 Gene Friend Rec Center
18 Victoria Manalo Draves Park

Figure 3.F-10
Hub Plan—Shadow Diagram on Fall/Spring Equinoxes (September 20/March 22) at 3 PM



ICF Graphics ... 00700.17 (6-13-2019)

Figure 3.F-11
Hub Plan—Shadow Diagram on Winter Solstice (December 20) at 9 AM



ICF Graphics ... 00700.17 (6-13-2019)

The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD)
Case Nos. 2015-000940ENV, 2017-008051ENV, 2016-014802ENV

Figure 3.F-12
Hub Plan—Shadow Diagram on Winter Solstice (December 20) at Noon

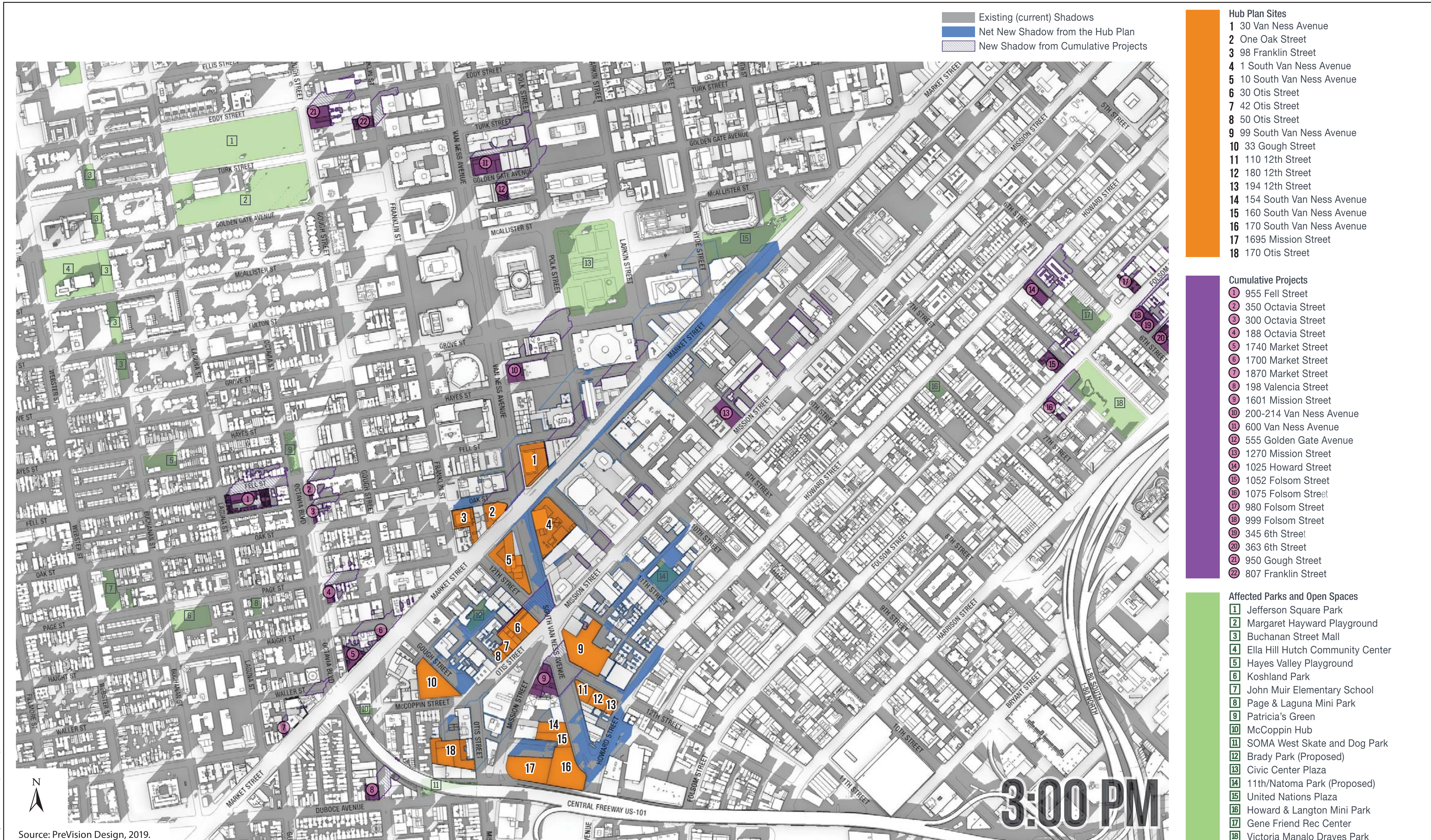
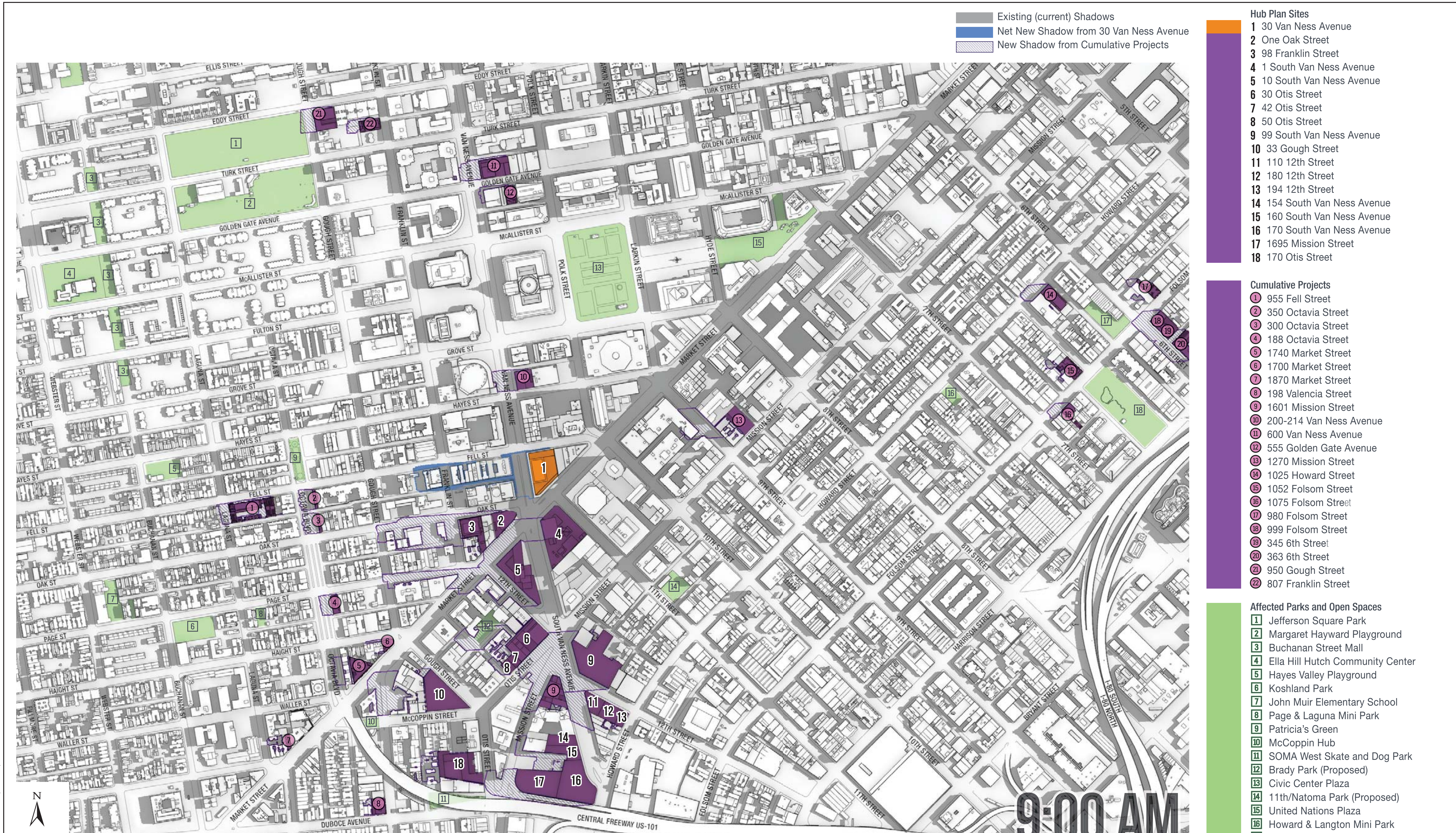
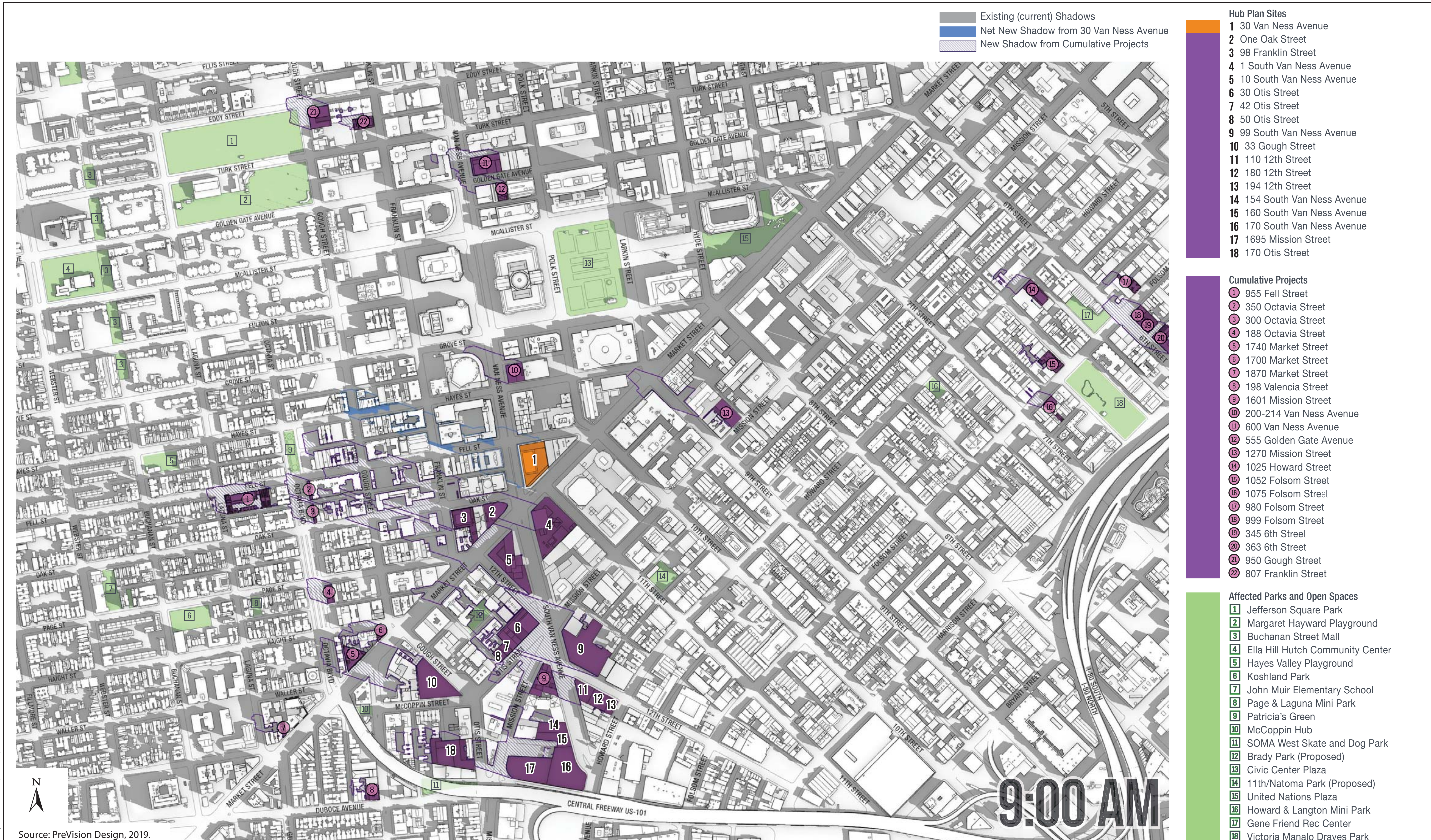


Figure 3.F-13
Hub Plan—Shadow Diagram on Winter Solstice (December 20) at 3 PM



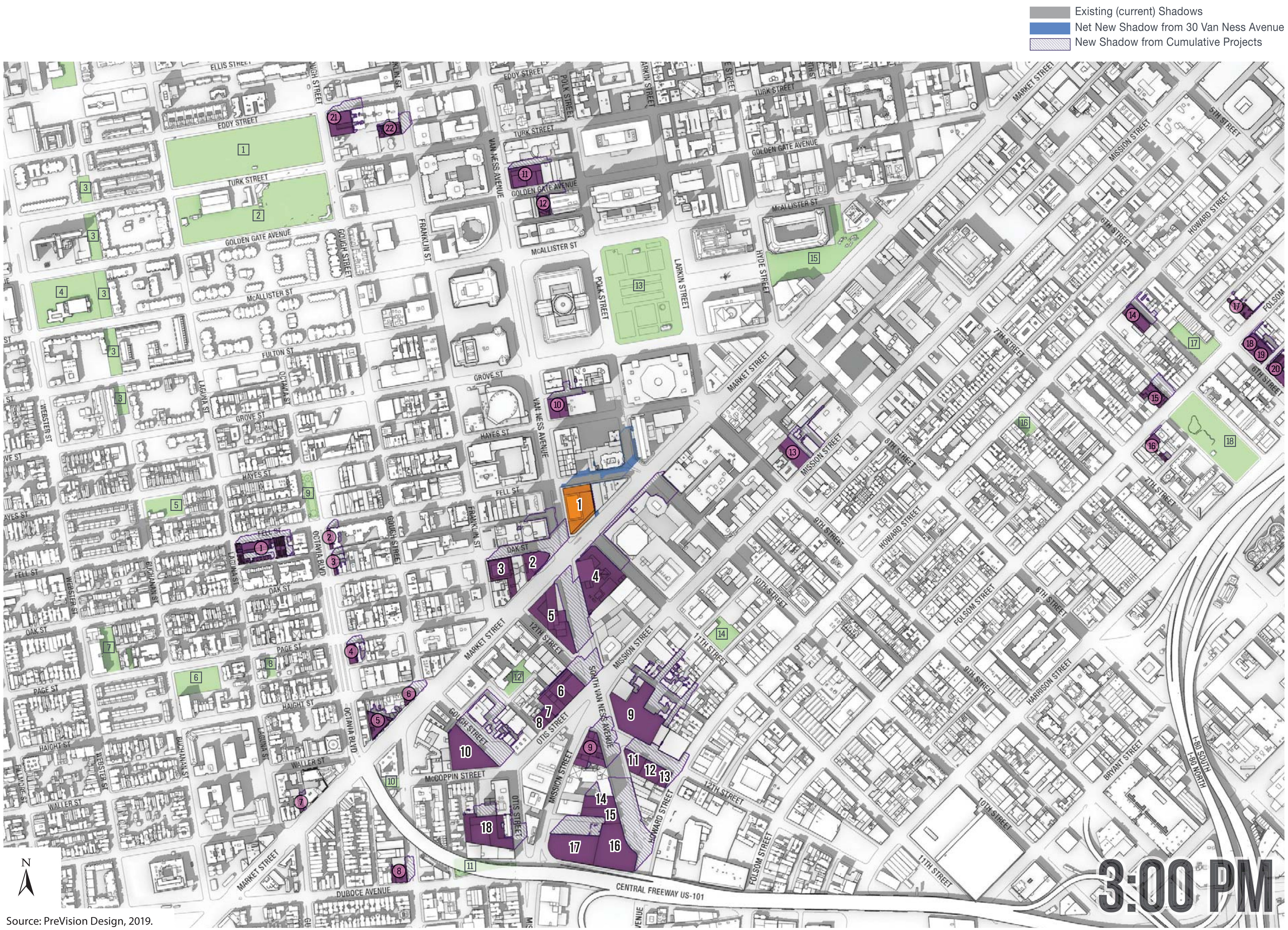
Source: PreVision Design, 2019.

Figure 3.F-14
30 Van Ness Avenue Project—Shadow Diagram on Summer Solstice (June 21) at 9 AM



ICF Graphics ... 00700.17 (6-13-2019)

Figure 3.F-15
30 Van Ness Avenue Project—Shadow Diagram on Fall/Spring Equinoxes (September 20/March 22) at 9 AM



Hub Plan Sites

1 30 Van Ness Avenue
2 One Oak Street
3 98 Franklin Street
4 1 South Van Ness Avenue
5 10 South Van Ness Avenue
6 30 Otis Street
7 42 Otis Street
8 50 Otis Street
9 99 South Van Ness Avenue
10 33 Gough Street
11 110 12th Street
12 180 12th Street
13 194 12th Street
14 154 South Van Ness Avenue
15 160 South Van Ness Avenue
16 170 South Van Ness Avenue
17 1695 Mission Street
18 170 Otis Street

Cumulative Projects

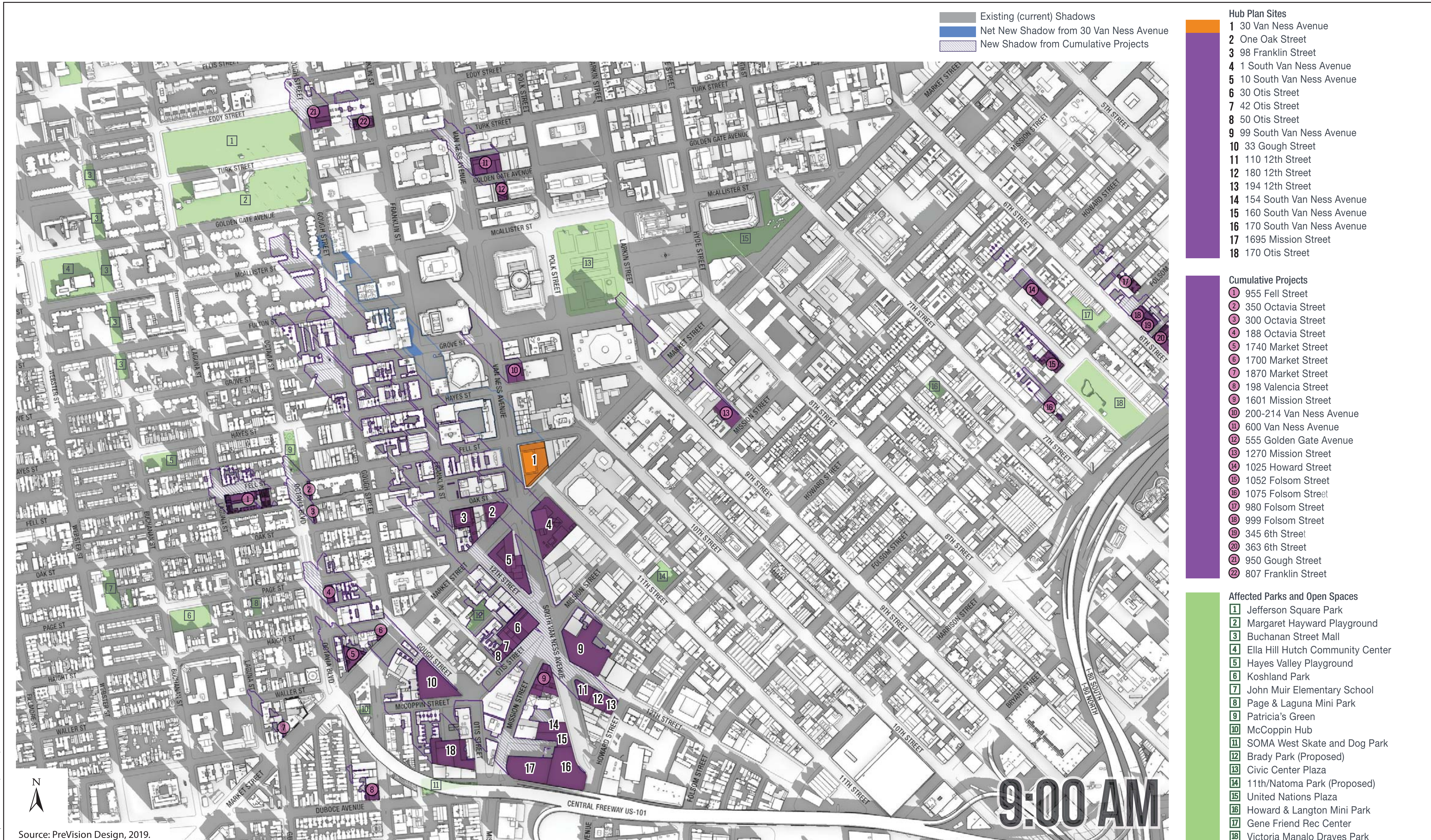
1 955 Fell Street
2 350 Octavia Street
3 300 Octavia Street
4 188 Octavia Street
5 1740 Market Street
6 1700 Market Street
7 1870 Market Street
8 198 Valencia Street
9 1601 Mission Street
10 200-214 Van Ness Avenue
11 600 Van Ness Avenue
12 555 Golden Gate Avenue
13 1270 Mission Street
14 1025 Howard Street
15 1052 Folsom Street
16 1075 Folsom Street
17 980 Folsom Street
18 999 Folsom Street
19 345 6th Street
20 363 6th Street
21 950 Gough Street
22 807 Franklin Street

Affected Parks and Open Spaces

1 Jefferson Square Park
2 Margaret Hayward Playground
3 Buchanan Street Mall
4 Ella Hill Hutch Community Center
5 Hayes Valley Playground
6 Koshland Park
7 John Muir Elementary School
8 Page & Laguna Mini Park
9 Patricia's Green
10 McCoppin Hub
11 SOMA West Skate and Dog Park
12 Brady Park (Proposed)
13 Civic Center Plaza
14 11th/Natoma Park (Proposed)
15 United Nations Plaza
16 Howard & Langton Mini Park
17 Gene Friend Rec Center
18 Victoria Manalo Draves Park

ICF Graphics ... 00700.17 (6-13-2019)

Figure 3.F-16
30 Van Ness Avenue Project—Shadow Diagram on Fall/Spring Equinoxes (September 20/March 22) at 3 PM



Source: PreVision Design, 2019.

Figure 3.F-17
30 Van Ness Avenue Project—Shadow Diagram on Winter Solstice (December 20) at 9 AM

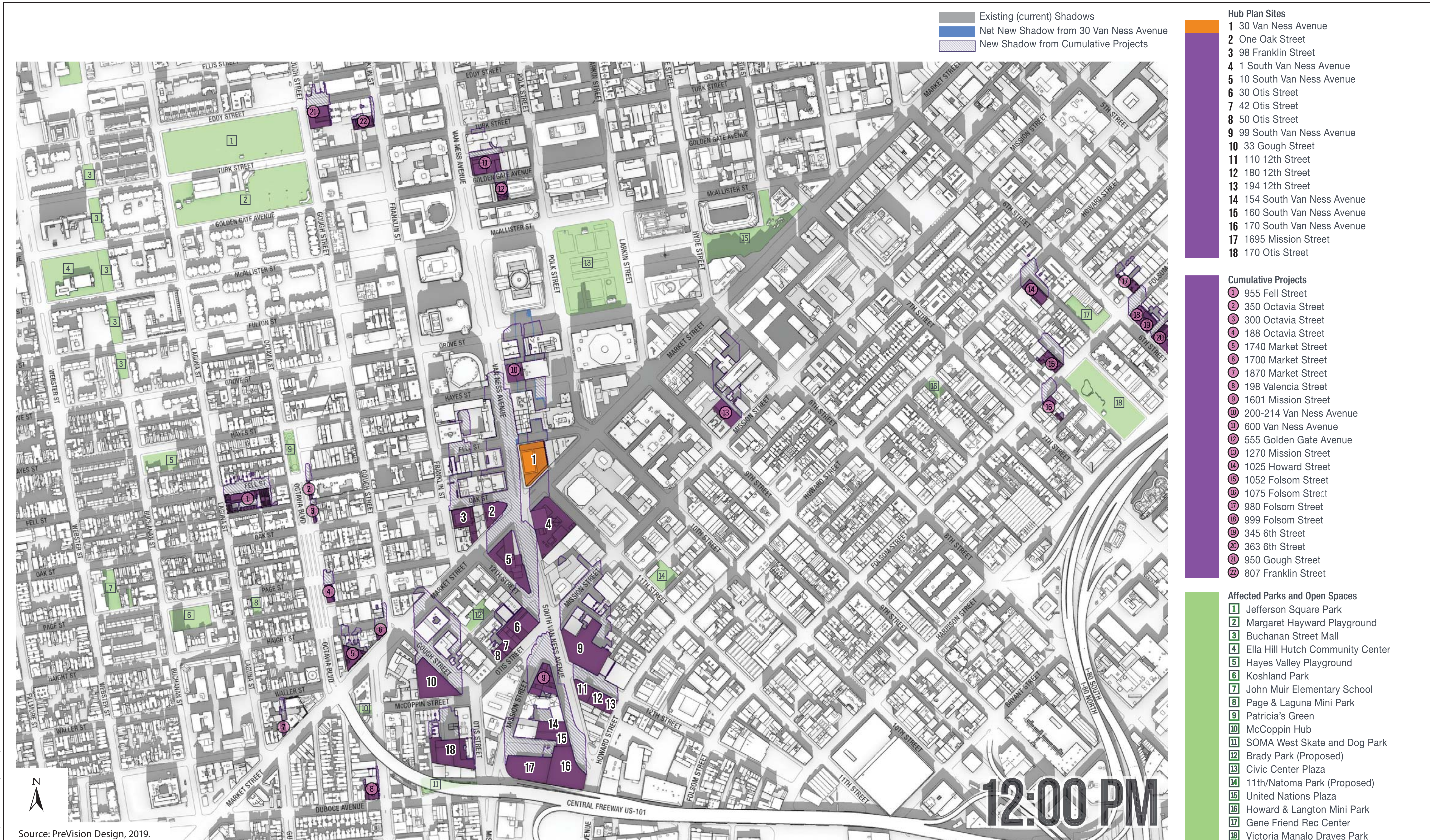
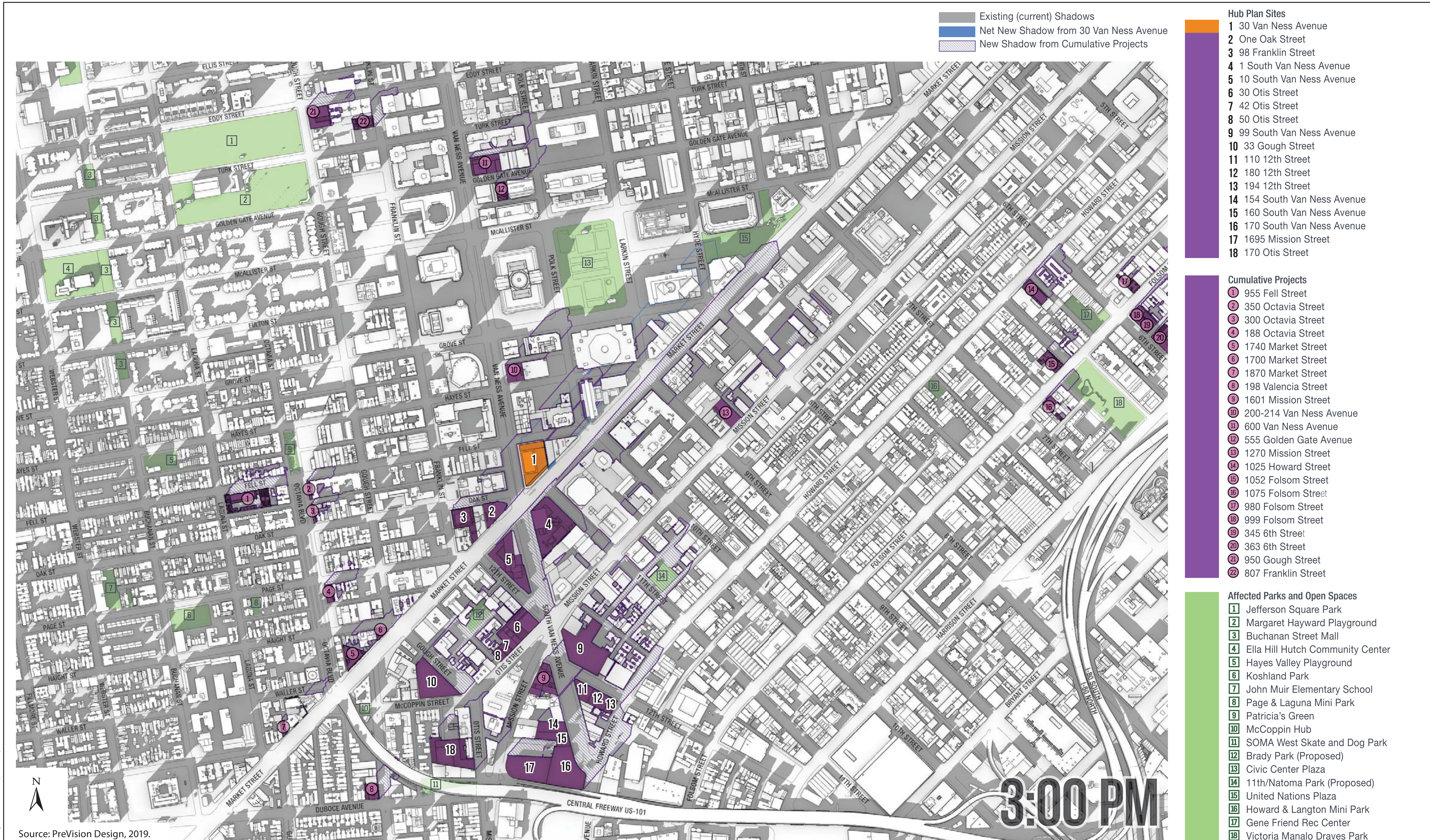


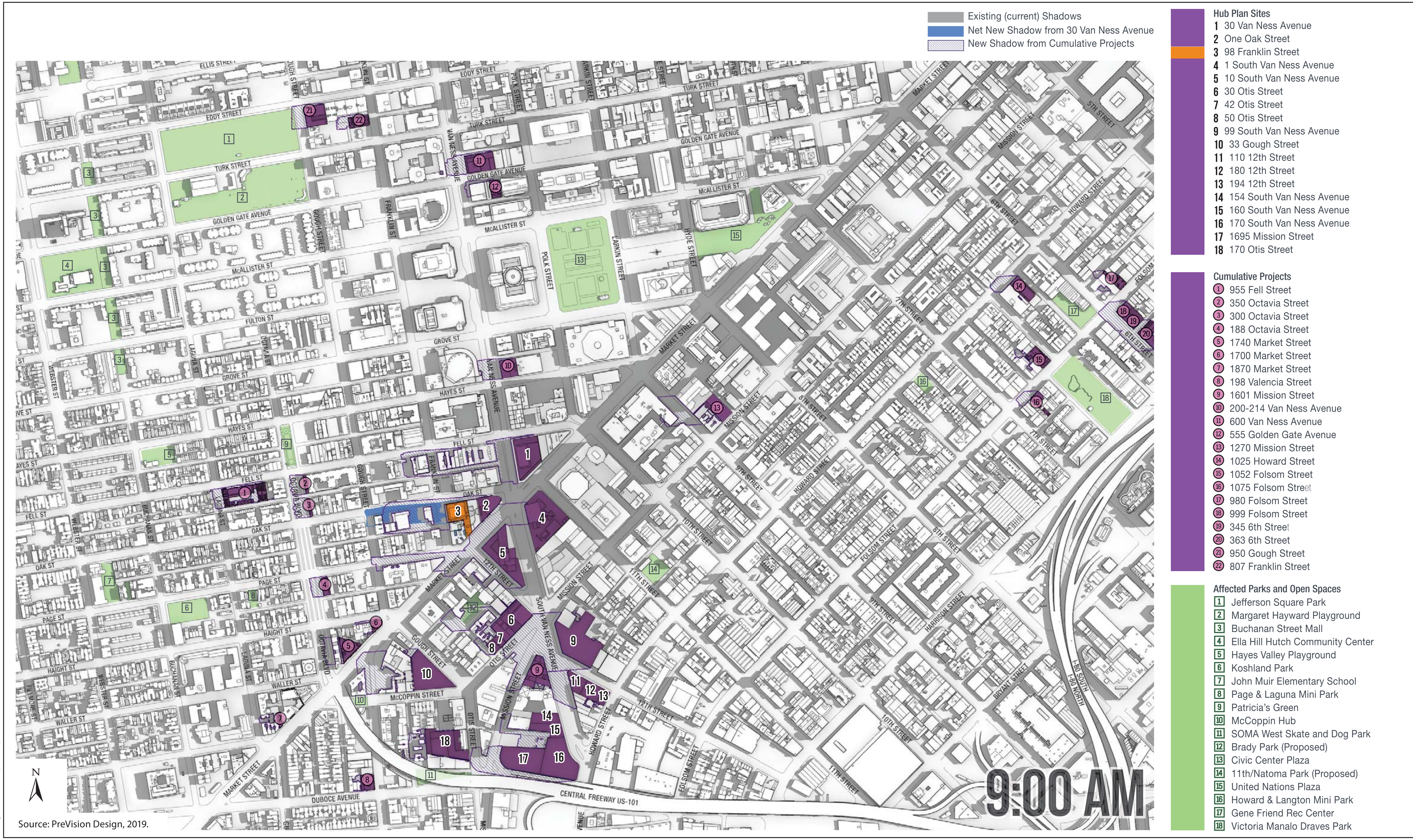
Figure 3.F-18
30 Van Ness Avenue Project—Shadow Diagram on Winter Solstice (December 20) at Noon



Source: PreVision Design, 2019.

ICF Graphics ... 00700.17 (6-13-2019)

Figure 3.F-19
30 Van Ness Avenue Project—Shadow Diagram on Winter Solstice (December 20) at 3 PM



Source: PreVision Design, 2019.

Figure 3.F-20
98 Franklin Street Project—Shadow Diagram on Summer Solstice (June 21) at 9 AM

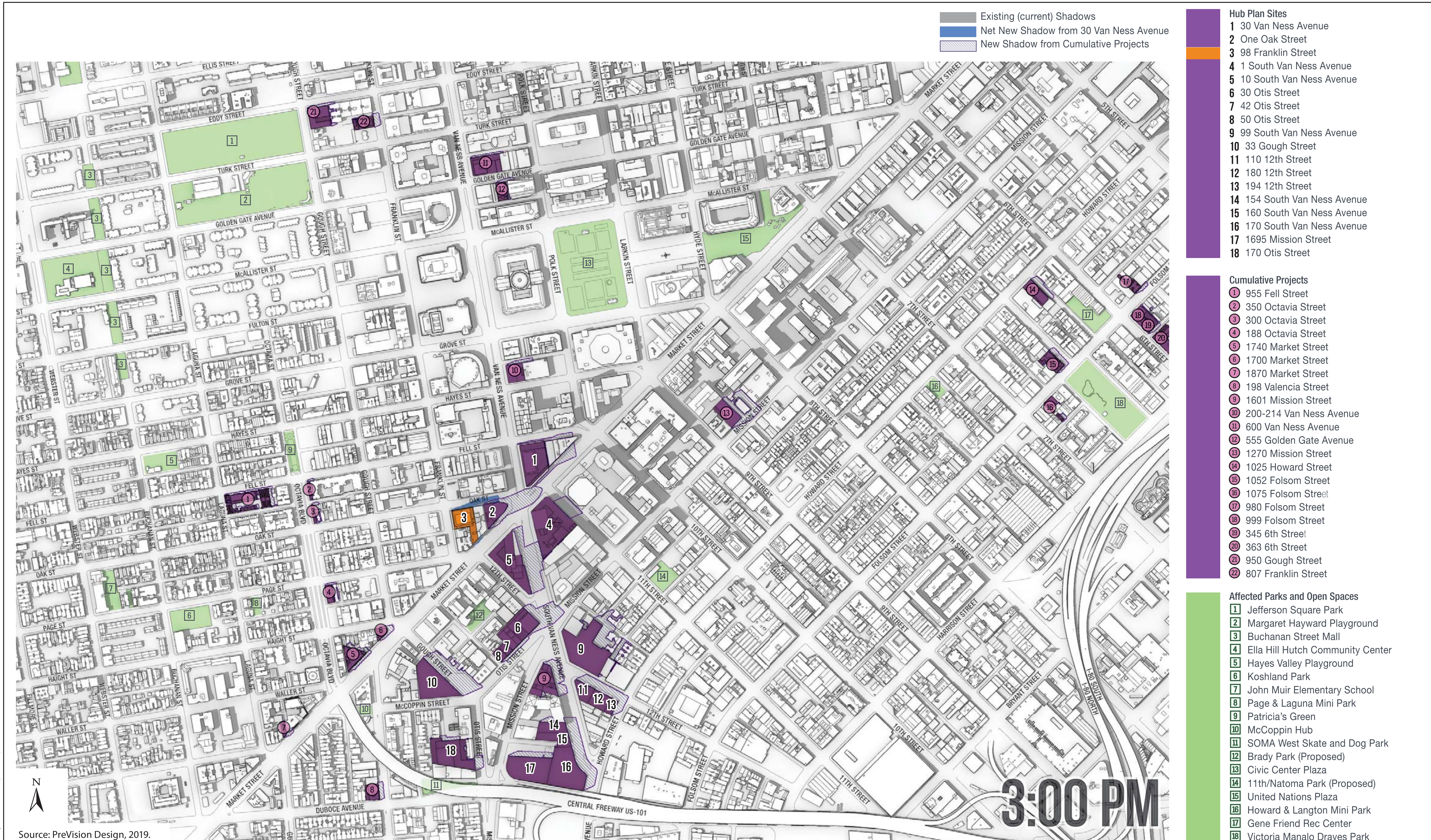


Figure 3.F-21
98 Franklin Street Project—Shadow Diagram on Summer Solstice (June 21) at 3 PM

Source: PreVision Design, 2019.

ICF Graphics ... 00700.17 (6-13-2019)

Figure 3.F-22
98 Franklin Street Project—Shadow Diagram on Fall/Spring Equinoxes (September 20/March 22) at 9 AM

This Page Intentionally Left Blank

established by the City, detailed shadow diagrams are only included for the RPD parks that would result in significant and unavoidable shadow impacts. Since significant and unavoidable shadow impacts would not occur on any RPD parks, all detailed shadow diagrams are only included in Appendix H-1.[14]

QUALITATIVE METHODOLOGY

To gain a better understanding of how net new shadow may or may not affect existing patterns of use in the affected open spaces that are subject to section 295, Prevision Design[15] conducted six 30-minute site visits to each open space to observe the nature and intensity of uses. Two site visits were performed in the morning, two at midday, and two late in the day, with one visit from each pair on a weekday and one on a weekend. The qualitative effects of net new shadow on the affected open spaces are discussed based on the size, timing, and duration of net new shadow and how such shadow might affect observed existing patterns of use.

MODELING ASSUMPTIONS

Existing Conditions Model. Prevision Design's existing conditions model reflects an accurate 3D representation of the affected area generated by Light Intensity Distance and Ranging [or Laser Imaging Detection and Ranging] (LIDAR) modeling of both the terrain of San Francisco and all existing buildings.[16] Locations, boundaries, and sizes of the affected open spaces are based on geographic information system (GIS) data provided by the department and/or RPD. Existing conditions are discussed under each park in the Environmental Setting section, above.

The Hub Plan Model. Building forms used for the 18 Hub Plan sites (i.e., the 18 sites where the Hub Plan would change building height limits) have been determined based on the level of

---

14 Note that the detailed shadow diagrams for Civic Center Plaza, as included in Appendix H-1, depict the design change for the 30 Van Ness Avenue Project, as submitted in April 2019. This change reduced the net height of the building and modified its form, resulting in substantially reduced net new shadow cast on Civic Center Plaza, along with equal or lesser shading on other parks and open spaces. Although the change in shadow effects on Civic Center Plaza with the revised 30 Van Ness Avenue Project proposal is depicted in Appendix H-1 and reflected in the analysis, it is not depicted in the shadow figures in this section.

15 In consultation with the department, use observation reporting for some parks and open spaces from prior shadow studies performed by Prevision Design has been re-used in cases where the nature of use has been substantially unchanged since the time when the use observation visits were performed. However, for purposes of this analysis, the use observations are summarized; refer to Appendix H-1 for full descriptions of use observations.

16 Recent buildings (built after 2010) and buildings currently under construction have been modeled and added by Prevision Design, based on design drawings of the projects and/or 3D models provided by their project sponsors.

information known about potential developments. The approach has been divided into three groups:

- *Group A:* Projects identified for upzoning and seeking individual project-level environmental clearance through this EIR (two sites): 30 Van Ness Avenue and 98 Franklin Street. For the two individual projects seeking project-level environmental clearance through this EIR, the buildings have been modeled based on the current plans on file for those projects. The 98 Franklin Street analysis is based on plans dated September 6, 2018, and the 30 Van Ness Avenue analysis is based on plans dated September 13, 2018. However, since the September 2018 plans, the 30 Van Ness Avenue Project has been redesigned to reduce shadow impacts on Civic Center Plaza. Therefore, the analysis of impacts on Civic Center Plaza (in Impact SH-2, below) has been updated with the revised plans.[17] However, the analysis of other affected open spaces represents a version of the 30 Van Ness Avenue Project that is larger in mass and bulk than the version described in the shadow analysis for Civic Center Plaza. As the mass of the revised 30 Van Ness Avenue Project has been reduced since the September 2018 plans, shadow effects of the revised project would be equal to or lesser than the shadow as described in the analysis of the sections of the other parks/open spaces. In addition, the shadow fan diagrams shown in this document reflect shadow cast by 30 Van Ness Avenue, as proposed in September 2018. Because the shadow fan has not been altered to reflect this change, the figures present a more conservative scenario with respect to the shadow effects of the 30 Van Ness Avenue Project.
- *Group B:* Projects that have their own completed or currently in-process environmental review but would not maximize the upzoned height allotment proposed under the Hub Plan (four sites): 1500-1540 Market Street (One Oak), 42 Otis Street, 10 South Van Ness Avenue, and 30 Otis Street. The One Oak and 42 Otis Street projects have completed environmental review but have not begun construction; the 10 South Van Ness Avenue Project is currently undergoing environmental review; and the 30 Otis Street Project has completed environmental review and is currently under construction. Completion of environmental review indicates that the project is reasonably foreseeable but not guaranteed. Furthermore, the possibility exists that the developers of these projects may allow entitlements to expire and develop a project that uses the full upzoned heights identified in this EIR. To capture the possibility of future height increases, the analysis massing for the Hub Plan Scenario is based on the proposed project designs, but with

[17] Prevision Design. 2019. Memorandum to Alana Callagy, San Francisco Planning Department. "Changes in shadow effects of the revised 30 Van Ness Avenue Project on Civic Center Plaza relative to the prior version of the 30 Van Ness Avenue Project analyzed in the Shadow analysis report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD) EIR (February 11, 2019)." June 5, 2019.

the maximum height extended to the full Hub Plan height plus a 20-foot-tall mechanical penthouse allowance. The exception to this approach is the project proposal for 10 South Van Ness Avenue, where the project sponsor has already submitted a 590-foot-tall design variant that reflects increased heights allowed under the Hub Plan. For this Hub Plan project, the analysis uses the design variant rather than altering the 400-foot-tall double-tower design proposal. The scenarios and heights modeled for the Shadow Study represent a more conservative scenario; if shorter heights are ultimately selected and constructed for the three projects not yet under construction, the results of the Shadow Study would not worsen.

- *Group C:* Projects identified for upzoning that have not filed a development application (11 sites): 1 South Van Ness Avenue, 50 Otis Street, 99 South Van Ness Avenue, 110 12th Street, 180 12th Street, 194 12th Street, 154 South Van Ness Avenue, 160 South Van Ness Avenue, 170 South Van Ness Avenue, 1695 Mission Street, 33 Gough Street, and 170 Otis Street. For all sites listed under Group C, except 1 South Van Ness Avenue, the analysis uses the full site boundary extended to the maximum proposed height plus a 20-foot-tall mechanical parapet allowance. For 1 South Van Ness Avenue, considering adjacent approximately 415- and 260-foot developments and San Francisco planning code requirements for tower separation, it would be unreasonable to assume that a project with a maximum bulk will be constructed to a full height of 650 feet. Therefore, the department has provided massing design for use in this analysis to reflect a more likely massing of a future project at 1 South Van Ness Avenue, assuming the maximum height of 650 feet allowed by the proposed Hub Plan but with massing and tower articulation (setbacks at certain heights) to be more consistent with San Francisco planning code.

Cumulative Conditions Scenario. The Cumulative Scenario uses the same assumptions for the Hub Plan as outlined above in the "Hub Plan Model."[18] In addition to the Hub Plan sites (including the 30 Van Ness Avenue Project and the 98 Franklin Street Project), other reasonably foreseeable projects that would cast shadow on publicly accessible open spaces affected by the Hub Plan have been included to analyze the total cumulative net new shadow. A complete list of cumulative projects in included in Appendix H-1 (Hub Plan, 30 Van Ness Avenue, 98 Franklin Street, and Hub Housing Sustainability Shadow Study).

DENSITY BONUS PROGRAMS

As discussed in Chapter 2, Project Description, the state density bonus program, as well as the City's Affordable Housing Bonus Program (codified in Planning Code section 206), would be applicable in the Hub Plan area. This would result in the potential for added height for affordable

[18] This includes the assumption that the 10 South Van Ness Avenue Project would be constructed as a 590-foot single tower. For informational purposes, the 400-foot-tall, double tower project variant is analyzed under Cumulative Scenario 2 in the Shadow Study (Appendix H-1).

housing projects. However, the locations where project sponsors might use the state or local density bonus programs are not known. Although these bonus programs permit an increase in residential density beyond that otherwise allowed, and enable project sponsors to request waivers or modifications with respect to planning code requirements, including height limits, they do not exempt subsequent projects from being subject to CEQA review. Therefore, pursuant to state density bonus law, any project for which additional height is requested would be evaluated further under CEQA.

IMPACT EVALUATION

Impact SH-1. The Hub Plan would create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. (Significant and Unavoidable)

As summarized in **Table 3.F-1**, the Hub Plan would cast net new shadow on 15 existing parks.[19] Significant shadows would be cast by the Hub Plan on McCoppin Hub (under the jurisdiction of public works). The shadow impacts on each affected existing park and open space are analyzed in more detail below. For parks that are under the jurisdiction of RPD, quantitative shadow calculations have been provided; the general timing of net new shadow effects for other non-RPD parks and open spaces are described qualitatively. Although proposed parks are included in **Table 3.F-1**, no quantitative calculations or CEQA impact conclusions are provided. **Figures 3.F-5 through 3.F-13** (pp. 3.F-22 through 3.F-30) show the shadow diagrams for the Hub Plan.

TABLE 3.F-1. SHADOW IMPACT SUMMARY – THE HUB PLAN

Park/Open Space (Jurisdiction)	Jurisdiction	Existing Shadow	The Hub Plan		
			% Increase	Timing	CEQA Conclusion
1. Jefferson Park Square	RPD	1.34%	0.0002%	Winter AM (16-28 days)	LTS
2. Margaret Hayward Playground	RPD	14.65%	0.09%	Winter AM (72-84 days)	LTS
3. Buchanan Street Mall	RPD	26.13%	0.01%	Fall/Winter AM (142-154 days)	LTS
4. Ella Hill Hutch Community Center	SFRED	n/a	n/a	Fall/Winter AM	LTS
5. Hayes Valley Playground	RPD	33.29%	0.07%	Fall/Spring AM (98-110 days)	LTS

[19] The shadow analysis for the Hub Plan originally analyzed the shadow impacts from 170 Otis Street at a height of 125 feet. A change to the project resulted in a revised height of 150 feet at 170 Otis. PreVision Design evaluated this height increase and determined that the change would incrementally increase the amount of net new shadow cast by the Hub Plan. However, no publicly accessible open spaces affected by net new shadow cast by the Hub Plan would receive additional shadow due to this change, and no other publicly accessible open spaces that were not affected by net new shadow cast by the Hub Plan would receive net new shadow due to this change. This memorandum is included as Appendix H-3.

TABLE 3.F-1. SHADOW IMPACT SUMMARY – THE HUB PLAN

Park/Open Space (Jurisdiction)	Jurisdiction	Existing Shadow	The Hub Plan % Increase	The Hub Plan Timing	The Hub Plan CEQA Conclusion
6. Koshland Community Park	RPD	15.45%	0.32%	Spring/Summer AM (113-125 days)	LTS
7. John Muir Elementary School	SFUSD	n/a	n/a	Spring/Summer AM	LTS
8. Page & Laguna Mini Park	RPD	50.80%	0.29%	Spr/Sum/Fall AM (153-165 days)	LTS
9. Patricia's Green	RPD	18.06%	1.53%	Fall/Win/Spr AM (254-266 days)	LTS
10. McCoppin Hub	PW	n/a	n/a	Spring/Summer AM	SU
11. SoMa West Skate and Dog Park	PW	n/a	n/a	Summer AM	LTS
12. Future Brady Park (proposed)	POPOS	n/a	n/a	Year-Round AM/PM	--
13. Civic Center Plaza	RPD	10.201%	0.004%	Winter Midday (30-42 days)	LTS
14. Future 11th/Natoma Park (Proposed)	RPD	22.09%	6.77%	Year-Round PM (351-363 days)	--
15. United Nations Plaza	PW	n/a	n/a	Winter PM	LTS
16. Howard & Langton Mini Park	RPD	41.03%	0.034%	Fall/Spring PM (56-68 days)	LTS
17. Gene Friend Recreation Center	RPD	48.29%	0.0004%	Fall/Winter PM (14-26 days)	LTS
18. Victoria Manalo Draves Park	RPD	6.43%	0.01%	Fall/Spring PM (28-40 days)	LTS

Notes:
n/a = Shadow load not calculated for non-RPD parks and open spaces.
SU = Significant and unavoidable
LTS = less than significant
NI = No Impact
RPD = San Francisco Recreation and Parks Department
SFRED = City and County of San Francisco Real Estate Division
SFUSD = San Francisco Unified School District
POPOS = privately owned public open space
PW = San Francisco Public Works

JEFFERSON SQUARE PARK (LOCATION 1)

Within the six 30-minute observation periods conducted by Prevision Design, the number of users in Jefferson Square Park ranged from 12 to 28 people, with uses that varied at different times of day and days of the week. Weekday midday visitors typically passed through the park and rested on grassy areas; dog owners were prevalent in the mornings and afternoon/evenings during the week and throughout the day on weekends at nearly all observation times, with the strongest presence during the weekend evenings.

The Hub Plan[20] would result in net new shadow cast on Jefferson Square Park, adding approximately 2,001 net new annual sfh of shadow and increasing the sfh of shadow by 0.002 percent annually above current levels. This increase would result in a new annual total shadow load of 1.3434 percent. Net new shadow from the Hub Plan would occur within the first 10 minutes of the daily analysis period between approximately December 7 and January 3. Net new shadow would fall only on the southwest corner of the park, affecting one public entry point, a portion of the paved walkways, as well as some grassy or landscaped areas.

The days of maximum net new shadow on the park due to the Hub Plan would occur on December 20 and 21, when the Hub Plan would shade the northwest corner of the park starting at 8:19 a.m. and would be present for approximately 8 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 8 minutes, with an average duration of about 7 minutes across all affected dates. The largest net new shadow cast would occur at 8:19 a.m. on December 20 and 21 and cover 1,217 sf, equivalent to 0.3 percent of the total area of Jefferson Square Park. Throughout the affected period, the average size of shadows, when present, would be 820 sf (about 0.3 percent of the total park area).

As discussed above, the portions of Jefferson Square Park that would receive net new shadow from the Hub Plan would include some walkways, a point of entry, some landscaped areas, and a small portion of grass adjacent to a pathway. No fixed benches would receive net new shadow as a result of the Hub Plan. As such, the features that would receive new shading are of lower sensitivity because their use is typically transitory in nature (i.e., entry area/walkways) or the features are similar to features in many nearby areas of the park (i.e., landscaped/grassy areas), which would be unshaded when other areas would be affected by net new shadow from the Hub Plan. In addition, the duration of shadow would be under 10 minutes, occurring on a limited number of days each year. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Jefferson Square Park.

MARGARET HAYWARD PLAYGROUND (LOCATION 2)

Within the six 30-minute observation periods conducted by Prevision Design, the observed usage of Margaret Hayward Playground varied from two users on a weekday morning to four users at midday on the weekend. Park users were children with accompanying adults playing on the play equipment and sand pit in the children's playground and a few adults sitting and talking or eating next to the clubhouse on the eastern end of the park and using the tennis courts. It was observed that the user intensity of the park was highest midday and in the afternoon during the week and weekend due to the presence of children; however, the park was used sparingly on weekday mornings.

---

[20] Note that the as the 30 Van Ness Avenue Project is the only Hub Plan site that would cast any net new shadow on Jefferson Square Park.

The Hub Plan would result in net new shadow cast on Margaret Hayward Playground, adding approximately 711,259 net new annual sfh of shadow and increasing the sfh of shadow by 0.09 percent annually above current levels. This increase would result in a new annual total shadow load of 14.74 percent. Net new shadow from the Hub Plan would occur within the first 34 minutes of the daily analysis period between approximately November 9 and January 31. Net new shadow would fall on the western half of the park, at times casting shadow on two public entry points, portions of the tennis courts, the children's playground, six fixed benches, the grassy area, multi-use hard court, as well as the southwest corner of the ball fields.

The days of maximum net new shadow on the park due to the Hub Plan would occur on December 20 and 21, when the Hub Plan would cast shadow across the western half of the park starting at 8:19 a.m. and be present for approximately 34 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 34 minutes with an average duration of about 22 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 8:30 a.m. on December 20 and 21 and cover 51,978 sf, equivalent to 23.7 percent of the total area of Margaret Hayward Playground. Throughout the affected period the average size of shadows, when present, would be 24,929 sf (about 11.4 percent of the total park area).

As described above, the portions of Margaret Hayward Playground that would receive net new shadow from the Hub Plan include portions of nearly all features within the park. Those features that could be of higher sensitivity include the children's play area, the six fixed benches, and, to a lesser degree, the tennis courts and grass fields. Although all of these features would receive some net new shadow under the Hub Plan, the shadow would occur only in the early morning, prior to 8:45 a.m., over the winter months. Lower levels of park use would be likely at that time. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Margaret Hayward Playground.

BUCHANAN STREET MALL (LOCATION 3)

Within the six 30-minute observation periods conducted by Prevision Design, the observed usage varied from a low count of three users on a weekday morning, with four users walking through, to a peak intensity of 18 users on a weekend midday. Most users were children playing on the equipment in several small playgrounds; the next-largest group was made up of adults sitting on the benches while talking or eating. It was observed that the largest number of users of the park occurred in the midday and afternoon during the week with fewer users observed during morning visits. Many users were observed using the park as a walkway to cut through to adjacent streets. Overall usage was highest during weekdays, later school hours, and the weekend afternoon, when more children were present.

The Hub Plan would result in net new shadow cast on the Buchanan Street Mall, adding approximately 23,564 net new annual sfh of shadow and increasing the sfh of shadow by 0.01

percent annually above current levels. This increase would result in a new annual total shadow load of 26.14 percent. Net new shadow from the Hub Plan would occur within the first 17 minutes of the daily analysis period between approximately October 5 and March 7. Net new shadow would fall on small portions of all five sections of the Buchanan Street Mall and affect portions of the pedestrian pathway and grass/landscape areas. No net new shadow would be cast on either of the children's play areas or the basketball/hard court area.

The days of maximum net new shadow on the park due to the Hub Plan would occur on February 22 and October 18, when the Hub Plan would shade the southern half of the portion of Buchanan Street Mall between Fulton and McAllister streets starting at 8:22 a.m. and be present for approximately 17 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 17 minutes with an average duration of about nine minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 7:36 a.m. on November 1 and February 8 and cover 5,035 sf, equivalent to 6.4 percent of the total area of the Buchanan Street Mall. Throughout the affected period, the average size of shadows, when present, would be 1,245 sf (about 1.6 percent of the total park area).

The portions of Buchanan Street Mall that would receive net new shadow from the Hub Plan include walkways and some landscaped/grassy areas. Neither children's play areas nor the basketball court would receive net new shadow. As such, features that would receive new shading are characterized as being of lower sensitivity because their use is typically transitory in nature (i.e., walkways) or the features are similar to features in nearby areas of the park (i.e., landscaped/grassy areas). Finally, the shadow would occur primarily over the winter months in the early mornings (prior to 8:45 a.m.), times when relatively lower levels of park use would be likely. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Buchanan Street Mall.

Ella Hill Hutch Community Center (Location 4)

Ella Hill Hutch Community Center is under the jurisdiction of SFRED. Therefore, the below analysis qualitatively describes the general timing of net new shadow effects and does not discuss observed uses.

The Hub Plan would result in a small amount of net new shadow cast on the Ella Hill Hutch Center, occurring early in the morning from mid-October through early December and again in early January through late February. Net new shadow would fall over several areas of the park, shading the public entry path at Webster Street and Golden Gate Avenue, portions of the grassy and landscaped areas in the northwest corner of the park, portions of the tennis courts, the community center entrance on McAllister Street, and the adjacent surface vehicle parking lot. The largest net new shadow cast by the Hub Plan would occur just after 7:30 a.m. in early November and again in early February, covering just under 25 percent of the total park area at that moment.

Although the park features would receive some net new shadow under the Hub Plan, the shadow would occur for a very short period of time daily (approximately 10 minutes or less) and only over the late fall and winter months in the early mornings prior to 8:15 a.m., times when lower levels of park use would be likely. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Ella Hill Hutch Center.

HAYES VALLEY PLAYGROUND (LOCATION 5)

Within the six 30-minute observation periods conducted by Prevision Design, the observed usage at Hayes Valley Playground varied from no users during a weekday morning to a peak intensity of 27 users on a weekday midday. Observed uses included young children accompanied by adults using the children's playground, users playing basketball on the basketball court, and others sitting and talking or eating on the benches in the park. It was observed that the user intensity of the park was highest midday and in the afternoon during the week with the increase largely due to more children arriving after school hours. Fewer users were observed during morning visits. A children's birthday party was occurring midday during the week, accounting for approximately half of the park users at that time.

The Hub Plan would result in net new shadow cast on Hayes Valley Playground, adding approximately 66,280 net new annual sfh of shadow and increasing the sfh of shadow by 0.07 percent annually above current levels. This increase would result in a new annual total shadow load of 33.36 percent. Net new shadow from the Hub Plan would occur within the first 16 minutes of the daily analysis period between approximately August 24 and October 17 and again between February 23 and April 18. Net new shadow would fall on the western two-thirds of the park, affecting one public entry point, portions of the tennis and basketball courts, both children's play areas, the exercise and fitness area, and landscaped areas.

The days of maximum net new shadow on the park due to the Hub Plan would occur on March 8 and October 4, when the Hub Plan would shade the central and northwest corner of the park starting at 8:09 a.m. and be present for approximately 16 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 16 minutes with an average duration of about 12 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 8 a.m. on September 20 and March 22 and cover 9,661 sf, equivalent to 36.3 percent of the total area of Hayes Valley Playground. Throughout the affected period, the average size of shadows, when present, would be 4,683 sf (about 17.6 percent of the total park area).

As discussed above, the portions of Hayes Valley Playground that would receive net new shadow from the Hub Plan include one public entry point, portions of the tennis and basketball courts, both children's play areas, the exercise and fitness area, and landscaped areas. The features that could be of higher sensitivity include the children's play areas, and, to a lesser degree, the tennis and basketball courts and the exercise and fitness area. Although these features would receive some net new shadow under the Hub Plan, the net new shadow would occur in the fall and spring for very short periods of time (16 minutes or less) during the early morning, prior to 8:30 a.m., when lower levels of park use would be likely. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Hayes Valley Playground.

KOSHLAND COMMUNITY PARK (LOCATION 6)

Within the six 30-minute observation periods conducted by Prevision Design, the observed usage at Koshland Community Park varied from a low count of two users during the weekend morning with only two users walking through, to a peak intensity of 30 users on a weekday afternoon with approximately one-third of the users walking through. In general, most users were children and adults playing on the play equipment in the children's playground; other users were sitting, eating, and socializing on the benches throughout the entire park. It was observed that the intensity of park use was highest midday and in the afternoon during the week. During the week, observed uses in the park in the morning included dog walking and an exercise class early in the morning. Two birthday parties were observed midday and in the afternoon during the week. Park usage increased during two of the three weekday visits when children were out of school for events and play. The community garden had one to three people watering or weeding during the weekday and weekend morning visits.

The Hub Plan would result in net new shadow cast on Koshland Community Park, adding approximately 427,055 net new annual sfh of shadow and increasing the sfh of shadow by 0.32 percent annually above current levels. This increase would result in a new annual total shadow load of 15.77 percent. Net new shadow from the Hub Plan would occur within the first 31 minutes of the daily analysis period between approximately April 20 and August 22. Net new shadow at various times would affect all portions of the park except for a small portion of the community garden area along the eastern edge of the park.

The days of maximum net new shadow on the park due to the Hub Plan would occur on May 17 and July 26, when the Hub Plan would shade the majority of the park starting at 7:07 a.m. and be present for approximately 31 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 31 minutes, with an average duration of about 21 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 7:15 a.m. on May 17 and July 26 and cover 30,119 sf of Koshland Community Park, equivalent to 84.3 percent of the total area. Throughout the affected period, the average size of shadows, when present, would be 11,914 sf (about 33.3 percent of the total park area).

As described above, the portions of Koshland Community Park that would receive net new shadow from the Hub Plan include two points of entry, a children's play area, a basketball/hard court, a community garden, walkways, and grassy/landscaped areas. The features that could be of higher sensitivity include the children's play areas, and, to a lesser degree, the basketball courts and the community garden area. The children's play area in particular would receive some net new shadow under the Hub Plan; however, the net new shadow would fall on this feature for only about 10 minutes in the early morning and be gone prior to 7:30 a.m. Overall, features affected by the Hub Plan would only receive net new shadow over the summer in the early mornings prior to 7:45 a.m., times when lower levels of park use would be likely. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Koshland Community Park.

JOHN MUIR ELEMENTARY SCHOOL (LOCATION 7)

John Muir Elementary School is under the jurisdiction of SFUSD. Therefore, this analysis qualitatively describes the general timing of net new shadow effects and does not discuss observed uses. The Hub Plan would result in net new shadow cast on the John Muir Elementary School Playground. The central portion of the playground area where the basketball court is located would be affected by net new shadow for a short duration of time during early morning for a few weeks in the late spring and again in the late summer. Although this feature is characterized as moderately sensitive to the effects of net new shadow, shadow cast by the Hub Plan would occur for a short duration, most likely prior to 8 a.m. and well before the playground would be open to the public at 9 a.m. Therefore, the Hub Plan would result in ***less-than-significant*** shadow on to John Muir Elementary School.

PAGE AND LAGUNA MINI PARK (LOCATION 8)

Within the six 30-minute observation periods conducted by Prevision Design, the number of users in the park ranged from zero to one person. During five of six visits, no park visitors were observed to be present. On the weekday afternoon site visit, a single user was seen walking through the park.

The Hub Plan would result in net new shadow cast on Page and Laguna Mini Park, adding approximately 71,416 net new annual sfh of shadow and increasing the sfh of shadow by 0.29 percent annually above current levels. This increase would result in a new annual total shadow load of 51.09 percent. Net new shadow from the Hub Plan would occur within the first 52 minutes of the daily analysis period over several time frames: between February 16 and March 7, April 20 and August 22, and October 5 and 24. Net new shadow would fall only on the northern and southern portions of the park, affecting one public entry point, a portion of the paved walkways, one fixed bench, some grassy or landscaped areas, and a small section of the community garden.

The days of maximum net new shadow on the park due to the Hub Plan would occur on June 14 and 28, when the Hub Plan would shade the northern and southern portions of the park starting at 6:48 a.m. and be present for approximately 50 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 52 minutes, with an average duration of about 36 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 7:16 a.m. on May 24 and July 19 and cover 1,349 sf, equivalent to 20.5 percent of the total area of Page and Laguna Mini Park. Throughout the affected period, the average size of shadows, when present, would be 829 sf (about 12.6 percent of the total park area).

The portions of Page and Laguna Mini Park that would receive net new shadow from the Hub Plan include one public entry point, a portion of the paved walkways, one fixed bench, some grassy or landscaped areas, and a small section of the community garden. Features that would receive new shading, including the entry and walkways, are characterized as being of lower sensitivity because their use is typically transitory in nature. Affected features that could be considered of higher sensitivity include the community garden and the fixed bench; however, these features would experience shading for a limited amount of time, mainly during early-morning hours. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Page and Laguna Mini Park.

PATRICIA'S GREEN (LOCATION 9)

Within the six 30-minute observation periods conducted by Prevision Design, the observed usage at Patricia's Green varied from a low count of 80 users on a weekday morning, with approximately one-half of the users walking through, to a peak intensity of 183 users on a weekend afternoon, with approximately one-third of the users walking through. The majority of users were walking and playing with dogs, sitting, and eating and socializing on the benches and picnic tables throughout the entire park. It was observed that the intensity of park use was highest at midday during the week when people eat lunch or watch a special event, such as a live music performance. Overall, observed peak use at the park occurred weekday midday and weekend afternoon; however, the park was observed to be actively used at all times.

The Hub Plan would result in net new shadow cast on Patricia's Green, adding approximately 1,018,855 net new annual sfh of shadow and increasing the sfh of shadow by 1.53 percent annually above current levels. This increase would result in a new annual total shadow load of 19.59 percent. Net new shadow from the Hub Plan would occur within the first 69 minutes of the daily analysis period between approximately August 10 and May 2. Net new shadow would affect all portions of the park at various times throughout the year.

The days of maximum net new shadow on the park due to the Hub Plan would occur on March 8 and October 4, when the Hub Plan would shade the majority of the park starting at 8:09 a.m. and be present for approximately 58 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 69 minutes with an average duration of about 33 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 8:45 a.m. on March 1 and October 11 and cover 15,404 sf, equivalent to 86.0 percent of the total area of Patricia's Green. Throughout the affected period, the average size of shadows, when present, would be 6,428 sf (about 35.9 percent of the total park area).

Portions of Patricia's Green would receive net new shadow from the Hub Plan. The portions of Patricia's Green that would likely be most sensitive to the addition of net new shadow would be the children's play area, the park's fixed benches, and the tables and seating areas. All of these features would receive some net new shadow, the presence of which would be noticeable to users of the park. The times for net new shadow would be in the early morning, prior to 9 a.m. The children's play area, which could be the most sensitive to additional shadow, would not receive net new shadow at any point after 8:30 a.m. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Patricia's Green.

McCoppin Hub (Location 10)

McCoppin Hub is under the jurisdiction of public works. Therefore, this analysis qualitatively describes the general timing of net new shadow effects and does not discuss observed uses. The Hub Plan would result in net new shadow cast on McCoppin Hub between late April and late August. On the affected dates, net new shadow would fall early in the morning for up to just under two hours prior to 9 a.m. Net new shadow would affect all parts of the park at various times throughout the affected period (i.e., late April through late August). The date when the most net new shadow due to the Hub Plan would occur is around June 21, when the park would be cast in shadow starting at 6:46 a.m., which would recede over the next two hours. The largest net new shadow cast by the Hub Plan would occur around 8 a.m. mid-June and, at the moment of maximum shading, shadow all of McCoppin Hub.

All portions of McCoppin Hub would receive net new shadow from the Hub Plan, but the features that would be most sensitive to the addition of net new shadow would be the fixed benches. The times for net new shadow would be in the early morning, prior to 8:30 a.m., when lower overall levels of park use would be typical. However, significant areas of net new shadow would be noticeable to users of the 0.1-acre park during affected times. There are no feasible mitigation measures that would reduce shadow impacts from the Hub Plan on McCoppin Hub. The shadow impacts of the Hub Plan on McCoppin Hub would be ***significant and unavoidable***.

SoMa West Skate and Dog Park (Location 11)

SoMa West Skate and Dog Park is under the jurisdiction of public works. Therefore, this analysis qualitatively describes the general timing of net new shadow effects and does not discuss observed uses. The Hub Plan would result in net new shadow cast on SoMa West Skate and Dog Park between mid-March and late September. Over the affected dates, net new shadow would fall early in the morning for up to just under two hours prior to 9 a.m. Net new shadow would affect only the skate park section of the park; no net new shadow would reach the dog park at any time of year. The date where the most net new shadow due to the Hub Plan would occur around June 21, when the park would be cast in shadow starting at 6:46 a.m., with shadows receding over the next two hours. The largest net new shadow cast by the Hub Plan would occur around 7:30 a.m. mid-June and at the moment of maximum shading cover less than 25 percent of the skateboard area of the SoMa West Skate and Dog Park.

Areas of net new shadow from the Hub Plan would most likely not be noticeable to users of the park during affected hours; the park is already in shadow because of its location directly under an elevated freeway. Therefore, because a large amount of shadow currently exists, impacts on the SoMa West Skate and Dog Park would be ***less than significant***.

FUTURE BRADY PARK (LOCATION 12) (PROVIDED FOR INFORMATIONAL PURPOSES)

The future Brady Park would be an approximately 0.46-acre POPOS. Because this park is not existing and not under the jurisdiction of RPD, the analysis presented below is for informational purposes only and no observed uses or significance conclusions are provided.

The future Brady Park would receive new shading from the Hub Plan throughout the year in the morning hours typically between approximately 9 a.m. and 11 a.m. Over winter months, afternoon shadow would additionally arrive around 1 p.m. and remain on the park throughout the afternoon. All portions of the future Brady Park would receive some net new shadow from the Hub Plan at various times throughout the year. Based on the conceptual design program for Brady Park, features that would receive net new shadow from the Hub Plan include areas of hardscape, pathways, raised succulent gardens with seating walls, a play structure, landscape planting, sculpture, and the "porch" area with movable seating. Although all features within the park would be affected, the features most sensitive to net new shadow would be the fixed seating areas and the play structure. The precise nature and duration of shading on particular features, as well as the nature and intensity of use of the future park, is not known, pending the construction of this park. However, it is likely that the late afternoon shadow cast on the more sensitive features of Brady Park would be more noticeable to park users than the effects of early morning shadow based on general patterns of use observed in other parks in San Francisco.

CIVIC CENTER PLAZA (LOCATION 13)[21]

Within the six 30-minute observation periods conducted by Prevision Design, the number of users in Civic Center Plaza ranged from approximately 280 to 900, with uses that varied at different times of day and days of the week. It is visited daily by large numbers of users that pass through on their way to or from San Francisco City Hall or other nearby destinations. The plaza is also used on a periodic basis for larger or special events or rallies. Overall, Civic Center Plaza was observed to be actively used at all times, with peak use occurring over the weekend visits, especially in the afternoon. Over the course of the use observation visits, between 45 and 75 percent of park users were observed to be passing through, with the remainder using the park as a destination. During the observation, an ice skating rink drew high numbers of weekend visitors (100 to 170); fewer visitors were observed on weekdays (10 to 40). The children's play areas were

---

[21] Due to design changes, all analysis for Civic Center Plaza is based on: Prevision Design. 2019. Memorandum to Alana Callagy, San Francisco Planning Department. "Changes in shadow effects of the revised 30 Van Ness Avenue Project on Civic Center Plaza relative to the prior version of the 30 Van Ness Avenue Project analyzed in the Shadow analysis report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR (February 11, 2019)." February 2019.

observed to have between 25 and 150 users. The café kiosk was observed to attract between 10 and 30 users across the park visits. Relatively few users (five to 10) were observed using the grassy areas over the course of the observation visits.

The Hub Plan[22] would result in net new shadow cast on Civic Center Plaza, adding approximately 29,748 net new annual sfh of shadow and increasing the sfh of shadow by 0.004 percent annually above current levels. This increase would result in a new annual total shadow load of 10.205 percent. Net new shadow from the Hub Plan would occur for up to 90 minutes in the early afternoon between approximately November 30 and January 10. Net new shadow would fall only along the southern edge of the park, affecting several grassy areas and several paved walkways. Net new shadow would not fall on either of the children's play areas.

The days of maximum net new shadow on the park due to the Hub Plan would occur on December 20 and 21, when the Hub Plan would shade portions of the southern edge of the park starting just before 1 p.m. and move eastward across the park over the course of approximately 90 minutes. The duration of the Hub Plan–generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 90 minutes, with an average duration of about 70 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 2:00 p.m. on December 13 and 28 and cover 1,219 sf, equivalent to 0.547 percent of the total area of Civic Center Plaza. Throughout the affected period, the average size of shadows, when present, would be 630 sf (about 0.3 percent of the total park area).

As discussed above, the portions of Civic Center Plaza that would receive net new shadow from the Hub Plan include several grassy areas, several paved walkways, and a café kiosk on the southern edge of the park. Features that would receive new shading are characterized as being of lower sensitivity because their use is either typically transitory in nature (i.e., walkways and café kiosk) or the features are similar to features in many nearby areas of the park (i.e., grassy areas), which would be unshaded when other areas would be affected by net new shadow from the Hub Plan. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Civic Center Plaza.

Future 11th/Natoma Park Site (Location 14) (Provided for Informational Purposes)

As the 11th/Natoma Park site is not yet a park and no future programming information has been developed or approved, the possible features affected and qualitative impacts of project-generated shadow on such features are undetermined and not reviewed. Since this park is not existing, the analysis presented below is for informational purposes only and no observed uses or significance conclusions are provided.

---

22 The site for the 30 Van Ness Avenue Project is the only Hub Plan site that would cast any net new shadow on Civic Center Plaza.

The Hub Plan would result in net new shadow cast on 11th/Natoma Park site, adding approximately 4,931,925 net new annual sfh of shadow and increasing the sfh of shadow by 6.77 percent annually above current levels. This increase would result in a new annual total shadow load of 28.86 percent. Net new shadow from the Hub Plan would occur in the late afternoon and early evening and be present for up to 134 minutes between approximately April 6 and September 5 and again between September 7 and April 4. Net new shadow would be cast over all but a small northern section of the park area.

The days of maximum net new shadow on the park due to the Hub Plan would occur on January 18 and November 22, when the Hub Plan would shade the western corner of the park starting just prior to 2 p.m. and grow in size for approximately 120 minutes through the end of the daily analysis period (3:54 p.m.) covering the majority of the park's area. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 134 minutes, with an average duration of about 101 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 2:45 p.m. on December 6 and January 4 and cover 18,233 sf, equivalent to 93.2 percent of the total area of the 11th/Natoma Park site. Throughout the affected period, the average size of shadows, when present, would be 829 sf (about 12.6 percent of the total park area).

United Nations Plaza (Location 15)

United Nations Plaza is under the jurisdiction of the public works department. Therefore, this analysis qualitatively describes the general timing of net new shadow effects and does not discuss observed uses. The Hub Plan would result in net new shadow cast on United Nations Plaza, adding a small amount of net new shadow that would occur for up to 45 minutes in the late afternoon between late November and mid-January. Net new shadow would fall only on a small northern portion of the plaza and a tiny sliver of the edge of the plaza adjacent to Market Street, affecting one public entry point and a BART/Muni access stair. The days of maximum net new shadow on the plaza due to the Hub Plan would occur around December 21, when the Hub Plan would shade the northern corner of the plaza starting just before 3 p.m. and be present for approximately 45 minutes. The largest net new shadow cast by the Hub Plan would occur in the late afternoon and would cover less than 5 percent of the total area of United Nations Plaza.

The portions of United Nations Plaza that would receive net new shadow from the Hub Plan include a plaza point of entry and a BART/Muni access stair. Therefore, features that would receive new shading are characterized as being of lower sensitivity because their use is typically transitory in nature. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on United Nations Plaza.

HOWARD AND LANGTON MINI PARK (LOCATION 16)

Within the six 30-minute observation periods conducted by Prevision Design, the observed usage at Howard and Langton Mini Park varied from one to nine users. Most park users were observed to be gardening, with some users using one of the two tables to eat, read, or socialize. Overall, observed peak use at the park occurred on weekends at midday and in the afternoon; use of the park, based on these observations, is characterized as low to moderate.

The Hub Plan would result in net new shadow cast on Howard and Langton Mini Park, adding approximately 12,767 net new annual sfh of shadow and increasing the sfh of shadow by 0.034 percent annually above current levels. This increase would result in a new annual total shadow load of 41.059 percent. Net new shadow from the Hub Plan would occur within the last 17 minutes of the daily analysis period between approximately February 16 and March 21 and again between September 21 and October 24. Net new shadow would fall only on the northern corner of the park, affecting the public entry gate and a portion of the community garden.

The days of maximum net new shadow on the park due to the Hub Plan would occur on March 8 and October 4, when shadow from the Hub Plan would shade the northern corner of the park starting just before 5:30 p.m. and be present for approximately 15 minutes. The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 17 minutes, with an average duration of about 12 minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 5:30 p.m. on March 8 and October 4 and cover 3,522 sf, equivalent to 16.4 percent of the total area of Howard and Langton Mini Park. Throughout the affected period, the average size of shadows, when present, would be 1,141 sf (about 11.2 percent of the total park area).

The portions of Howard and Langton Mini Park that would receive net new shadow from the Hub Plan would include the public point of entry and portions of the community garden. Although some users of the community garden may notice the presence of a small amount of net new shadow if they were to be present during the affected period, the short duration and limited number of dates annually of net new shadow would be unlikely to affect the use and enjoyment of the park or have any impact on plant health and growth. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Howard and Langton Mini Park.

GENE FRIEND RECREATION CENTER (LOCATION 17)

Within the six 30-minute observation periods conducted by Prevision Design, the intensity of park usage varied from a low count of 10 users on a weekend morning to a peak intensity of 59 users occurring on a weekday afternoon. Benches were consistently used with approximately two to nine users sitting, relaxing, or socializing, with the exception of the weekend afternoon. Similar levels of use were observed at the basketball court with approximately one to 21 users. It was observed that the intensity of the park was highest during the weekday afternoon, likely due to after-school activities. During this time, all areas of the park were used. Overall, observed peak use of the park occurred on a weekday afternoon; at other times, one-third of the peak number of users, or less, was observed. Accordingly, the intensity of use varied but is characterized as low to moderate.

The Hub Plan would result in net new shadow cast on the Gene Friend Recreation Center, adding approximately 700 sfh net new annual sfh of shadow and increasing the sfh of shadow by 0.0004 percent annually above current levels. This increase would result in a new annual total shadow load of 48.2937 percent. Net new shadow from the Hub Plan would occur within the last 6 minutes of the daily analysis period between February 16 and 28 and again between October 12 and 24. Net new shadow would fall only on a very small area in the northeast portion of the park, affecting a small portion of the basketball court.

The days of maximum net new shadow on the park due to the Hub Plan would occur on February 22 and October 18, when the Hub Plan would shade a portion of the basketball court starting at 5:27 p.m. and be present for approximately six minutes (until the end of the daily analysis period). The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 6 minutes, with an average duration of about six minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 5:27 p.m. on February 22 and October 18 and cover 519 sf, equivalent to 1.2 percent of the total area of the Gene Friend Recreation Center. Throughout the affected period, the average size of shadows, when present, would be 519 sf (about 1.2 percent of the total park area).

The portions of Gene Friend Recreation Center that would receive net new shadow from the Hub Plan would include a small portion of the basketball court. Although this area could be considered to be of moderate sensitivity, the extremely small area of shading and its short duration would make it unlikely that park users would be adversely affected. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Gene Friend Recreation Center.

VICTORIA MANALO DRAVES PARK (LOCATION 18)

Within the six 30-minute observation periods conducted by Prevision Design, the number of users in the park ranged from four to 68, with uses that varied at different times of day and days of the week. Observed park uses included children playing in the playground areas and people eating lunch and resting on benches, walking dogs, playing basketball or soccer, barbecuing, working in the community garden, and, for a small portion of observed users, passing through the park. Overall, observed usage was higher during the weekday midday and afternoon visits as well as during the weekend morning and midday visits.

The Hub Plan would result in net new shadow cast on the Victoria Manalo Draves Park, adding approximately 45,921 net new annual sfh of shadow and increasing the sfh of shadow by 0.01 percent annually above current levels. This increase would result in a new annual total shadow load of 6.44 percent. Net new shadow from the Hub Plan would occur within the last nine minutes of the daily analysis period between approximately March 2 and 21 and again between September

21 and October 10. Net new shadow would fall only on portions of the northern and central sections of the park, affecting one public entry point, the basketball court, a portion of one of the children's play areas, several fixed seating areas, and paved walkways and some grassy or landscaped areas.

The days of maximum net new shadow on the park due to the Hub Plan would occur on March 8 and October 4, when the Hub Plan would shade the northern corner of the park starting at approximately 5:38 p.m. and be present for approximately nine minutes (until the end of the daily analysis period). The duration of the Hub Plan-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and nine minutes with an average duration of about eight minutes across all affected dates. The largest net new shadow cast by the Hub Plan would occur at 5:47 p.m. on March 8 and October 4 and cover 14,357 sf, equivalent to 13.1 percent of the total area of the Victoria Manalo Draves Park. Throughout the affected period, the average size of shadows, when present, would be 13,502 sf (about 12.3 percent of the total park area).

The portions of Victoria Manalo Draves Park that would be more sensitive to the addition of net new shadow are areas where users remain rather than pass through; these areas were observed to be well used. Based on the use observations performed, the basketball court, the children's play area, the park's fixed benches, and the tables and seating areas would be considered to be the most sensitive areas under the criterion discussed above. Although several of these more sensitive features would receive net new shadow, the duration of such shadow would be very short (under 10 minutes); these features would be affected only on a limited number of days each year. Other features that would receive new shading are characterized as being of lower sensitivity because that their use is either typically transitory in nature (i.e., entry area/walkways) or the features are similar to features in many nearby areas in the park (i.e., landscaped/grassy areas), which would be unshaded when other areas would be affected by net new shadow from the Hub Plan. Therefore, the Hub Plan would result in ***less-than-significant*** shadow impacts on Victoria Manalo Draves Park.

PUBLIC STREETS AND SIDEWALKS

Where the Hub Plan would include increases to the allowable building heights, the extent and duration of shadows cast on public streets and sidewalks could increase if and when individual taller buildings are developed, compared to those that currently exist. Although implementation of the Hub Plan would add net new shadows, these shadows would be transitory in nature and would not substantially affect the use of the streets and sidewalks. As shown in **Figure 3.F-2** through **Figure 3.F-13** (pp. 3.F-19 to 3.F-30), the overall increase in shading of sidewalks in the Hub Plan area and vicinity would not represent a substantial change, particularly during midday hours when more people are likely to be using sidewalks for leisure activities, as opposed to simply walking to and from work. The Hub Plan would not increase shadows above levels that are common and generally expected in a densely developed urban environment. Therefore, shadow impacts on public streets and sidewalks would be ***less than significant***.

CONCLUSIONS

As described above, the Hub Plan would generate net new shadow on each of the open spaces analyzed and on public streets and sidewalks. In total, 15 existing parks would be affected by the Hub Plan. For the reasons discussed above, the RPD parks and open spaces were evaluated quantitatively and for all other parks, a qualitative analysis was provided.

For the Hub Plan, the annual increase in new shadow on existing RPD parks and open spaces would range from 0.0002 percent (Jefferson Square Park) to 1.53 percent (Patricia's Green) throughout the year, with the number of days of increased shadow ranging from approximately 16 to 363 days per year. Net shadow impacts would be less than significant or no impact for the all RPD parks and for public streets and sidewalks.

With regard to the qualitative shadow impacts for the non-RPD parks and open spaces, the majority would not result in significant net new shadows. However, shadow impacts from the Hub Plan on McCoppin Hub would be ***significant***.

Mitigation Measures

There are no feasible mitigation measures that would reduce shadow impacts from the Hub Plan on McCoppin Hub.

Significance After Mitigation

The shadow impacts from the Hub Plan would be ***significant and unavoidable*** on McCoppin Hub because of the annual increase in the new shadows and the timing.

The department does not consider plan- or project-related shading on proposed open spaces in the impact analysis of shadow. Therefore, the discussion above relating to the future Brady Park and future 11th/Natoma Park Site is provided for informational purposes only, and no impact conclusion is required or provided. The Hub Plan would be expected to increase shadows at the future 11th/Natoma Park Site, under the jurisdiction of RPD. In addition, all portions of the future Brady Park would receive some net new shadow from the Hub Plan.

Future housing projects may apply for various housing bonus programs that would allow buildings to be taller than the proposed height limits. Although the current proposed height limits analyzed in this EIR are the most reasonable assumptions currently known, future buildings on the 18 sites proposed for upzoning under the Hub Plan, as well as other sites throughout the Hub Plan area that are not proposed for upzoning, may be above the height limits that have been evaluated. Thus, shadows on some of the parks and open spaces may be greater than those disclosed in this EIR; however, since the height and location of where height increases could occur are currently unknown, an analysis of future density bonus is speculative. Any project for which additional height is requested, pursuant to state density bonus law, would be evaluated further in accordance with CEQA at that time.

Impact SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. (Less than Significant)

As summarized in **Table 3.F-2**, p. 3.F-62, the 30 Van Ness Avenue Project[23] would cast net new shadow on eight existing parks. In addition, the 98 Franklin Street Project would cast net new shadow on two existing parks and one proposed park. For parks under the jurisdiction of RPD, quantitative shadow calculations have been provided; the general timing of net new shadow effects for other non-RPD parks and open spaces is qualitatively listed. Although proposed parks are included in **Table 3.F-2**, no quantitative calculations or CEQA impact conclusions are provided. The net new shadows that would result from the 30 Van Ness Avenue Project and the 98 Franklin Street Project are shown in **Figures 3.F-14 through 3.F-22**, pp. 3.F-31 through 3.F-39. For purposes of this analysis, the observed uses at these parks are not repeated; refer to Impact SH-1, above.

The following parks and open spaces analyzed for the Hub Plan (under Impact SH-1, above) would not be affected by the 30 Van Ness Avenue Project or the 98 Franklin Street Project and, therefore, are not discussed further below: Buchanan Street Mall, Ella Hill Hutch Community Center, John Muir Elementary School, McCoppin Hub, SoMa West Skate and Dog Park, the future Brady Park, Gene Friend Recreation Center, and Victoria Manalo Draves Park. No shadows would be cast on these parks by either the 30 Van Ness Avenue Project or the 98 Franklin Street Project; therefore, ***no impacts*** would result.

JEFFERSON SQUARE PARK (LOCATION 1)

30 Van Ness Avenue Project. The proposed 30 Van Ness Avenue Project would result in net new shadow cast on Jefferson Square Park, but because the 30 Van Ness Avenue Project is the only Hub Plan site that would cast any net new shadow on Jefferson Square Park, the description of the size, amount, timing and locations of shadow under the Hub Plan Scenario (Impact SH-1) is identical to that under the Hub Plan Scenario as described above. **Table 3.F-2** includes a breakdown of net new shadow for the 30 Van Ness Avenue Project scenario.

---

[23] The 30 Van Ness Avenue analysis is based on plans dated September 13, 2018. However, since the September 2018 plans, the 30 Van Ness Avenue Project has been redesigned to reduce shadow impacts on Civic Center Plaza. Therefore, the analysis of impacts on Civic Center Plaza has been updated with the revised plans. However, the analysis of other affected open spaces represents a version of the 30 Van Ness Avenue Project that is larger in mass and bulk than the version described in the below Civic Center Plaza shadow analysis. As the mass of the revised 30 Van Ness Avenue Project has been reduced since the September 2018 plans, shadow effects of the revised project would be equal to or lesser than the shadow as described in the analysis of the other parks/open spaces sections.

TABLE 3.F-2. SHADOW IMPACT SUMMARY FOR 30 VAN NESS AVENUE PROJECT AND 98 FRANKLIN STREET PROJECT

Park/Open Space (Jurisdiction)	Jurisdiction	Existing Shadow	30 Van Ness Avenue Project			98 Franklin Street Project		
			% Increase	Timing	CEQA Conclusion	% Increase	Timing	CEQA Conclusion
Jefferson Park Square	RPD	1.34%	0.0002%	Winter AM (16-28 days)	LTS	--	--	NI
Margaret Hayward Playground	RPD	14.65%	0.06%	Winter AM (72-84 days)	LTS	--	--	NI
Buchanan Street Mall	RPD	26.13%	--	--	NI	--	--	NI
Ella Hill Hutch Community Center	SFRED	n/a	--	--	NI	--	--	NI
Hayes Valley Playground	RPD	33.29%	0.01%	Fall/Spring AM (28-40 days)	LTS	--	--	NI
Koshland Community Park	RPD	15.45%	0.02%	Spring/Summer AM (29-41 days)	LTS	--	--	NI
John Muir Elementary School	SFUSD	n/a	--	--	NI	--	--	NI
Page & Laguna Mini Park	RPD	50.80%	--	--	NI	0.03%	Summer AM (59-69 days)	LTS
Patricia's Green	RPD	18.06%	0.36%	Fall/Spring AM (84-96 days)	LTS	0.39%	Fall/Spring AM (254-266 days)	LTS
McCoppin Hub	PW	n/a	--	--	NI	--	--	NI
SoMa West Skate and Dog Park	PW	n/a	--	--	--	--	--	--
Future Brady Park (proposed)	POPOS	n/a	--	--	--	--	--	--
Civic Center Plaza	RPD	10.201%	0.004%	Winter Midday (30-42 days)	LTS	--	--	NI
Future 11th/Natoma Park (proposed)	RPD	22.09%	--	--	--	0.15%	Summer PM (85-97 days)	--
United Nations Plaza	PW	n/a	n/a	Winter PM	LTS	--	--	NI
Howard & Langton Mini Park	RPD	41.03%	0.004%	Fall/Spring PM (14-26 days)	LTS	--	--	NI

TABLE 3.F-2. SHADOW IMPACT SUMMARY FOR 30 VAN NESS AVENUE PROJECT AND 98 FRANKLIN STREET PROJECT

			30 Van Ness Avenue Project			98 Franklin Street Project		
Park/Open Space (Jurisdiction)	Jurisdiction	Existing Shadow	% Increase	Timing	CEQA Conclusion	% Increase	Timing	CEQA Conclusion
Gene Friend Recreation Center	RPD	48.29%	--	--	NI	--	--	NI
Victoria Manalo Draves Park	RPD	6.43%	--	--	NI	--	--	NI

Notes:
n/a = Shadow load not calculated for non-RPD parks and open spaces.
SU = Significant and unavoidable
LTS = less than significant
NI = No Impact
-- = Park/open space not affected by Hub Plan or 30 Van Ness Avenue Project.
RPD = San Francisco Recreation and Parks Department
SFRED = City and County of San Francisco Real Estate Division
SFUSD = San Francisco Unified School District
POPOS = privately owned public open space
PW = San Francisco Public Works

Portions of Jefferson Square Park that would receive net new shadow from the 30 Van Ness Avenue Project include a point of entry, walkways, and some landscaped areas, as well as a small portion of grass adjacent to the pathway. Features that would receive new shading are characterized as being of lower sensitivity because their use is either typically transitory in nature (i.e., entry area/walkways) or the features are similar to features in many nearby areas of the park (i.e., landscaped/grassy areas), which would be unshaded when other areas would be affected by net new shadow from the 30 Van Ness Avenue Project. In addition, the duration of such shadow would be under 10 minutes and on a limited number of dates each year. Therefore, the 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on Jefferson Square Park.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on Jefferson Park Square; therefore, ***no impact*** would occur.

MARGARET HAYWARD PLAYGROUND (LOCATION 2)

30 Van Ness Avenue Project. The proposed 30 Van Ness Avenue Project would result in net new shadow cast on Margaret Hayward Playground, adding approximately 456,286 net new annual sfh of shadow and increasing the sfh of shadow by 0.06 percent annually above current levels. This increase would result in a new annual total shadow load of 14.71 percent. Net new shadow from the 30 Van Ness Avenue Project would occur within the first 28 minutes of the daily analysis period between approximately November 9 and January 31. Net new shadow would fall on the same areas affected by the Hub Plan, as discussed in Impact SH-1.

The days of maximum net new shadow on the park due to 30 Van Ness Avenue would occur on December 20 and 21, when the 30 Van Ness Avenue Project would cast shadow across the western half of the park starting at 8:19 a.m. and be present for approximately 28 minutes. The duration of 30 Van Ness Avenue-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 28 minutes with an average duration of about 17 minutes across all affected dates. The largest net new shadow cast by 30 Van Ness Avenue would occur at 8:15 a.m. on December 13 and 28 and cover 34,758 sf, equivalent to 15.8 percent of the total area of Margaret Hayward Playground. Throughout the affected period, the average size of shadows, when present, would be 22,090 sf (about 10.1 percent of the total park area).

The portions of Margaret Hayward Playground that would receive net new shadow from the 30 Van Ness Avenue Project include portions of nearly all features within the park. Those features that could be of higher sensitivity include the children's play area, the six fixed benches, and, to a lesser degree, the tennis courts and grass fields. Although all of these features would receive some net new shadow under the 30 Van Ness Avenue Project, the shadow would occur only over the winter months in the early mornings prior to 8:45 a.m., times when lower levels of park use would be likely. Therefore, the 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on Margaret Hayward Playground.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on Margaret Hayward Playground; therefore, ***no impact*** would occur.

HAYES VALLEY PLAYGROUND (LOCATION 5)

30 Van Ness Avenue Project. The 30 Van Ness Avenue Project would result in net new shadow cast on Hayes Valley Playground, adding approximately 13,774 net new annual sfh of shadow and increasing the sfh of shadow by 0.01 percent annually above current levels. This increase would result in a new annual total shadow load of 33.30 percent. Net new shadow from the 30 Van Ness Avenue Project would occur within the first 16 minutes of the daily analysis period between approximately March 30 and April 18 and again between August 24 and September 12. Net new shadow would fall on the southwestern half of the park, affecting one public entry point, portions of the tennis court, portions of both children's play areas, and some landscaped areas.

The days of maximum net new shadow on the park due to the 30 Van Ness Avenue Project would occur on April 5 and September 6, when the 30 Van Ness Avenue Project would shade portions of the center and northwest corner of the park starting at 7:44 a.m. and be present for approximately 15 minutes. The duration of 30 Van Ness Avenue-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 16 minutes with an average duration of about 12 minutes across all affected dates. The largest net new shadow cast by 30 Van Ness Avenue would occur at 7:44 a.m. on April 5 and September 6 and cover 6,711 sf, equivalent to 25.2 percent of the total area of Hayes Valley Playground. Throughout the affected period, the average size of shadows, when present, would be 2,838 sf (about 10.7 percent of the total park area).

The portions of Hayes Valley Playground that would receive net new shadow from the 30 Van Ness Avenue Project include one public entry point, portions of the tennis courts, both children's play areas, and landscaped areas. The features that could be of higher sensitivity include the children's play areas, and, to a lesser degree, the tennis courts. Although these features would receive some net new shadow under the 30 Van Ness Avenue Project, the net new shadow would occur in the fall and spring for very short periods of time (16 minutes or less) during the early morning, prior to 8:30 a.m., when lower levels of park use would be likely. Therefore, 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on Hayes Valley Playground.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on Hayes Valley Playground; therefore, ***no impact*** would occur.

KOSHLAND COMMUNITY PARK (LOCATION 6)

30 Van Ness Avenue Project. The 30 Van Ness Avenue Project would result in net new shadow cast on Koshland Community Park, adding approximately 23,640 net new annual sfh of shadow and increasing the sfh of shadow by 0.02 percent annually above current levels. This increase would result in a new annual total shadow load of 15.47 percent. Net new shadow from the 30

Van Ness Avenue Project would occur within the first 8 minutes of the daily analysis period between approximately April 20 and August 22. Net new shadow would fall only along the northern edge of the park along Page Street, affecting one public entry point, the basketball/hard court, a portion of the community garden, as well as some landscaped areas.

The days of maximum net new shadow on the park due to the 30 Van Ness Avenue Project would occur on June 21, when the 30 Van Ness Avenue Project would shade the northern edge of the park starting at 6:46 a.m. and be present for approximately 8 minutes. The duration of 30 Van Ness Avenue Project-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 8 minutes, with an average duration of about 6 minutes across all affected dates. The largest net new shadow cast by the 30 Van Ness Avenue Project would occur at 6:46 a.m. on June 21 and cover 9,110 sf—equivalent to 25.2 percent of the total area of Koshland Community Park. Throughout the affected period, the average size of shadows, when present, would be 5,646 sf (about 15.8 percent of the total park area).

The portions of Koshland Community Park that would receive net new shadow from the 30 Van Ness Avenue Project would include one public entry, small portions of the community garden and basketball court, and grassy or landscaped areas along the northern edge of the park. In addition, the duration of shadow cast by the 30 Van Ness Avenue Project would be under 10 minutes and on a limited number of dates each year. The features that could be of higher sensitivity include the basketball courts and the community garden area. Overall, features affected by the 30 Van Ness Avenue Project would only receive net new shadow over the summer in the early mornings prior to 7:45 a.m., times when lower levels of park use would be likely. Therefore, the 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on Koshland Community Park.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on Koshland Community Park; therefore, ***no impact*** would occur.

PAGE AND LAGUNA MINI PARK (LOCATION 8)

30 Van Ness Avenue Project. The 30 Van Ness Avenue Project would not generate any net new shadow that would fall on Page and Laguna Mini Park; therefore, ***no impact*** would occur.

98 Franklin Street Project. The 98 Franklin Street Project would result in net new shadow cast on the Page and Laguna Mini Park, adding approximately 8,039 net new annual sfh of shadow and increasing the sfh of shadow by 0.03 percent annually above current levels. This increase would result in a new annual total shadow load of 50.83 percent. Net new shadow from 98 Franklin Street would occur within the first 20 minutes of the daily analysis period between approximately May 18 and July 25. Net new shadow would fall only on the northern edge the park, affecting one public entry point, a portion of the paved walkways as well as some grassy or landscaped areas.

The days of maximum net new shadow on the park due to the 98 Franklin Street Project would occur on June 7 and July 5, when the 98 Franklin Street Project would shade the northern edge of the park starting at 6:52 a.m. and be present for approximately 16 minutes. The duration of 98 Franklin Street Project-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 20 minutes, with an average duration of about 13 minutes across all affected dates. The largest net new shadow cast by the 98 Franklin Street Project would occur at 6:46 a.m. on June 14 and 28 and cover 868 sf, equivalent to 13.2 percent of the total area of Page and Laguna Mini Park. Throughout the affected period, the average size of shadows, when present, would be 669 sf (about 10.2 percent of the total park area).

The portions of Page and Laguna Mini Park that would receive net new shadow from the 98 Franklin Street Project would include one public entry point, a portion of the paved walkways, one fixed bench, some grassy or landscaped areas, and a small section of the community garden. Features that would receive new shading that are characterized as being of lower sensitivity because their use is typically transitory in nature include the entry area and walkways. Affected features that could be considered of higher sensitivity include the community garden and the fixed bench. However, shadow cast by the 98 Franklin Street Project would occur in the summer for a short duration (33 minutes or less) and be gone prior to 8 a.m., corresponding to times of typically lower levels of park use. Therefore, impacts on the Page and Laguna Mini Park would be ***less than significant***.

PATRICIA'S GREEN (LOCATION 9)

30 Van Ness Avenue Project. The 30 Van Ness Avenue Project would result in net new shadow cast on Patricia's Green, adding approximately 239,936 net new annual sfh of shadow and increasing the sfh of shadow by 0.36 percent annually above current levels. This increase would result in a new annual total shadow load of 18.42 percent. Net new shadow from 30 Van Ness Avenue Project would occur within the first 46 minutes of the daily analysis period between March 16 and May 2 and again between August 10 and September 26. Net new shadow would affect all portions of the park at various times throughout the year.

The days of maximum net new shadow on the park due to 30 Van Ness Avenue Project would occur on April 5 and September 6, when the 30 Van Ness Avenue Project would shade the central and northern portions of the park starting at 7:44 a.m. and be present for approximately 38 minutes. The duration of 30 Van Ness Avenue Project-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 46 minutes with an average duration of about 31 minutes across all affected dates. The largest net new shadow cast by 30 Van Ness Avenue Project would occur at 8:15 a.m. on August 30 and April 12 and cover 10,762 sf, equivalent to 60.1 percent of the total area of Patricia's Green. Throughout the affected period, the average size of shadows, when present, would be 5,286 sf (about 29.5 percent of the total park area).

98 Franklin Street Project. 98 Franklin Street Project would result in net new shadow cast on Patricia's Green, adding approximately 262,065 net new annual sfh of shadow and increasing the sfh of shadow by 0.39 percent annually above current levels. This increase would result in a new annual total shadow load of 18.45 percent. Net new shadow from the 98 Franklin Street Project would occur within the first 46 minutes of the daily analysis period between February 2 and March 28 and again between September 14 and November 7. Net new shadow would affect all portions of the park at various times throughout the year.

The days of maximum net new shadow on the park due to the 98 Franklin Street Project would occur on March 1 and October 11, when the 98 Franklin Street Project would shade the central and northern portions of the park starting at 8:16 a.m. and be present for approximately 36 minutes. The duration of 98 Franklin Street Project-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 46 minutes, with an average duration of about 36 minutes across all affected dates. The largest net new shadow cast by the 98 Franklin Street Project would occur at 8:45 a.m. on March 1 and October 11 and cover 10,314 sf, equivalent to 57.6 percent of the total area of Patricia's Green. Throughout the affected period, the average size of shadows, when present, would be 4,458 sf (about 24.9 percent of the total park area).

Conclusions. The portions of Patricia's Green that would likely be most sensitive to the addition of net new shadow would be the children's play area, the park's fixed benches, and the tables and seating areas. All of these features would receive some net new shadow from both the 30 Van Ness Avenue Project and the 98 Franklin Street Project, the presence of which would be noticeable to users of the park. The times for net new shadow would be in the early morning, prior to 9 a.m. The children's play area, which could be the most sensitive to additional shadow, would not receive net new shadow at any point after 8:30 a.m. Therefore, both the 30 Van Ness Avenue Project and the 98 Franklin Street Project would result in ***less-than-significant*** shadow impacts on Patricia's Green.

CIVIC CENTER PLAZA (LOCATION 13)

30 Van Ness Avenue Project. The proposed 30 Van Ness Avenue Project would also result in net new shadow cast on Civic Center Plaza, but as 30 Van Ness Avenue is the only Hub Plan site which would cast any net new shadow on Civic Center Plaza, the description of the size, amount, timing and locations of shadow under the Hub Plan Scenario is identical to that under the 30 Van Ness Avenue Project Scenario (Impact SH-1). The portions of Civic Center Plaza that would receive net new shadow from the 30 Van Ness Avenue Project include several grassy areas, several paved walkways, and a café kiosk. Features that would receive new shading are characterized as being of lower sensitivity because their use is typically transitory in nature (i.e., walkways and café kiosks) or the features are similar to features in many nearby areas of the park (i.e., grassy areas), which would be unshaded when other areas would be affected by net new shadow from the 30 Van Ness Avenue Project. Therefore, the 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on Civic Center Plaza.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on Civic Center Plaza; therefore, ***no impact*** would occur.

FUTURE 11TH/NATOMA PARK SITE (LOCATION 14) (PROVIDED FOR INFORMATIONAL PURPOSES)

30 Van Ness Avenue Project. The 30 Van Ness Avenue Project would not generate any net new shadow that would fall on the future 11th/Natoma Park Site.

98 Franklin Street Project. The 98 Franklin Street Project would result in net new shadow cast on the 11th/Natoma Park Site, adding approximately 112,157 net new annual sfh of shadow and increasing the sfh of shadow by 0.15 percent annually above current levels. This increase would result in a new annual total shadow load of 22.24 percent. Net new shadow from the 98 Franklin Street Project would occur in the late afternoon/early evening for up to 33 minutes between May 4 and August 8. Net new shadow would fall only on the southern half of the park.

The day of maximum net new shadow on the park due to 98 Franklin Street would occur on June 21, when the 98 Franklin Street Project would shade the southern half of the park starting just prior to 7 p.m. and be present for approximately 33 minutes. The duration of 98 Franklin Street-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 33 minutes with an average duration of about 26 minutes across all affected dates. The largest net new shadow cast by the 98 Franklin Street Project would occur at 7 p.m. on June 21 and cover 4,256 sf, equivalent to 21.7 percent of the total area of the 11th/Natoma Park Site. Throughout the affected period, the average size of shadows, when present, would be 2,613 sf (about 13.3 percent of the total park area).

As the 11th/Natoma Park site is not yet a park and no future programming information has been developed nor approved, the possible features affected and qualitative impacts of project-generated shadow on such features are undetermined and not reviewed.

UNITED NATIONS PLAZA (LOCATION 15)

30 Van Ness Avenue Project. The proposed 30 Van Ness Avenue Project would result in net new shadow cast on United Nations Plaza, adding a small amount of net new shadow that would occur for up to 45 minutes in the late afternoon between late November and mid-January. Net new shadow would fall only on a small northern portion of the plaza, affecting one public entry point and a BART/Muni access stair. The days of maximum net new shadow on the park due to 30 Van Ness Avenue would occur around December 21, when the 30 Van Ness Avenue Project would shade the northern corner of the plaza starting after 3 p.m. and be present for approximately 30 minutes. The largest net new shadow cast by 30 Van Ness Avenue would occur in the late afternoon and would cover less than 5 percent of the total area of United Nations Plaza.

The portions of United Nations Plaza that would receive net new shadow from the 30 Van Ness Avenue Project include a plaza point of entry and a BART/Muni access stair. Therefore, features that would receive new shading are characterized as being of lower sensitivity because their use is typically transitory in nature. Therefore, the 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on United Nations Plaza.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on United Nations Plaza; therefore, ***no impact*** would occur.

HOWARD AND LANGTON MINI PARK (LOCATION 16)

30 Van Ness Avenue Project. The 30 Van Ness Avenue Project would result in net new shadow cast on Howard and Langton Mini Park, adding approximately 1,584 net new annual sfh of shadow and increasing the sfh of shadow by 0.004 percent annually above current levels. This increase would result in a new annual total shadow load of 41.029 percent. Net new shadow from 30 Van Ness Avenue would occur for up to seven minutes in the late afternoon between approximately March 9 and 21 and again between September 21 and October 3. Net new shadow would fall only on a small portion of the northern corner of the park, affecting the public entry gate and part of the community garden.

The days of maximum net new shadow on the park due to 30 Van Ness Avenue would occur on March 15 and September 27, when the 30 Van Ness Avenue Project would shade the northern corner of the park starting at approximately 5:51 p.m. and be present for approximately seven minutes (until the end of the daily analysis period). The duration of 30 Van Ness Avenue-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and seven minutes. The largest net new shadow cast by 30 Van Ness Avenue would occur at 5:58 p.m. on March 15 and September 27 and cover 1,067 sf, equivalent to 10.4 percent of the total area of Howard and Langton Mini Park. Throughout the affected period, the average size of shadows, when present, would be 1,067 sf (about 10.4 percent of the total park area).

The portions of Howard and Langton Mini Park that would receive net new shadow from the 30 Van Ness Avenue Project would include the public point of entry and portions of the community garden. Although some users of the community garden may notice the presence of a small amount of net new shadow if they were to be present during the affected period, the short duration and limited number of dates annually of net new shadow would be unlikely to affect the use and enjoyment of the park or make any impact on plant health and growth. Therefore, the 30 Van Ness Avenue Project would result in ***less-than-significant*** shadow impacts on Howard and Langton Mini Park.

98 Franklin Street Project. The 98 Franklin Street Project would not generate any net new shadow that would fall on Howard and Langton Mini Park; therefore, ***no impact*** would occur.

PUBLIC STREETS AND SIDEWALKS

The 30 Van Ness Avenue Project and the 98 Franklin Street Project would increase shadows on public streets and sidewalks due to the proposed building heights. Although implementation of both projects would add net new shadows, these shadows would be transitory in nature and would not substantially affect the use of the streets and sidewalks. As shown in **Figures 3.F-14 through 3.4-22** (pp. 3.F-31 through 3.F-39), the overall increase in shading in the vicinity would not represent a substantial change, particularly during midday hours when more people are likely to be using sidewalks for leisure activities, as opposed to simply walking to and from work. The 30 Van Ness Avenue Project and the 98 Franklin Street Project would not increase shadows above levels that are common and generally expected in a densely developed urban environment. Therefore, shadow impacts on public streets and sidewalks would be ***less than significant***.

CONCLUSIONS

30 Van Ness Avenue Project. As described above, the Van Ness Avenue Project would generate net new shadow on nearby open spaces, public streets, and sidewalks. In total, eight existing parks would result in increased shadow impacts from the 30 Van Ness Avenue Project. For the reasons discussed above, the RPD parks and open spaces were evaluated quantitatively and for all other parks, a qualitative analysis was provided. The annual increase in new shadow on existing parks and open spaces would range from 0.0002 percent (Jefferson Square Park) to 0.36 percent (Patricia's Green) throughout the year, with the number of days of increased shadow ranging from approximately 16 to 96 days per year. Net shadow impacts would be ***less than significant*** or ***no impact*** for all parks, public streets, and sidewalks.

98 Franklin Street Project. The 98 Franklin Street Project would result in net new shadow cast on the Page and Laguna Mini Park, Patricia's Green, the proposed 11th/Natoma Park Site, and public streets and sidewalks. However, as discussed above, the net new shadows cast would be ***less than significant***. The 98 Franklin Street Project would not impact other parks in the area.

CUMULATIVE IMPACTS

As discussed above, the Cumulative Scenario assumes all Hub Plan sites reflect the maximum proposed heights under the Hub Plan plus a 20-foot-tall mechanical parapet allowance. For the 10 South Van Ness Avenue Project, the 590-foot-tall project variant is studied under existing conditions as well as cumulative.[24] In addition to the Hub Plan sites, the 30 Van Ness Avenue Project, and the 98 Franklin Street Project, other reasonably foreseeable projects that would cast shadow on publicly accessible open spaces affected by the Hub Plan have been additionally included to analyze the total cumulative net new shadow. A complete list of cumulative projects is included in Appendix H-1 (Shadow Study).

[24] For informational purposes, the 400-foot-tall double tower project variant is analyzed under a Cumulative Scenario 2 in the Shadow Study (Appendix H-1).

The below cumulative analysis considers all parks and open spaces that could be affected by cumulative development. For each, three Cumulative Scenarios are addressed: the Hub Plan plus cumulative projects (under Impact C-SH-1), the 30 Van Ness Avenue Project plus cumulative projects (under Impact C-SH-2), and the 98 Franklin Street Project plus cumulative projects (under Impact C-SH-2).

Table 3.F-3 and **Figures 3.F-5 through 3.F-13**, pp. 3.F-22 through 3.F-30, depict the net new shadow from cumulative projects.

Impact C-SH-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts. (Significant and Unavoidable)

The following parks and open spaces, as analyzed above under Impact SH-1, would not be affected by any net new shadow under the Cumulative Scenario because no other reasonably foreseeable projects would shadow these open space areas in combination with shadowing from the Hub Plan: Margaret Hayward Playground, Buchanan Street Mall, Ella Hill Hutch Center, Hayes Valley Playground, Koshland Community Park, John Muir Elementary School, Page and Laguna Mini Park, and United Nations Plaza. Therefore, as shown in **Table 3.F-3** there would be no cumulative shadow impact related to these parks, and no further analysis is required. In addition, no other reasonably foreseeable projects, in combination with the Hub Plan, would shade the future Brady Park and the future 11th/Natoma Park; therefore, these parks are also not discussed further.

As shown in **Table 3.F-3**, the following parks, as well as streets and sidewalks, would experience shadowing from cumulative projects in combination with shadowing from the Hub Plan: Jefferson Square Park, Patricia's Green, McCoppin Hub, Civic Center Plaza, Howard & Langton Mini Park, Gene Friend Recreation Center, Victoria Manalo Draves Park, SoMa West Skate and Dog Park, and public streets and sidewalks. Therefore, the cumulative shadow impact as it relates to additional shadowing on these eight parks, public streets, and sidewalks would be significant. The contribution to these cumulative shadow impacts from the Hub Plan are discussed further below.

TABLE 3.F-3. SHADOW IMPACT SUMMARY – CUMULATIVE IMPACTS

			Cumulative		CEQA Conclusion		
Park/Open Space (Jurisdiction)	**Jurisdiction**	**Existing Shadow**	**% Increase**	**Timing**	**Hub Plan Contribution**	**30 Van Ness Avenue Contribution**	**98 Franklin Street Contribution**
Jefferson Square Park	RPD	1.34%	0.64%	Year-round AM (365 days)	Not Cumulatively Considerable	Not Cumulatively Considerable	No Contribution
Margaret Hayward Playground	RPD	14.65%	0.09%	Winter AM (72–84 days)	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Buchanan Street Mall	RPD	26.13%	0.01%	Fall/Winter AM (142–154 days)	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Ella Hill Hutch Community Center	SFRED	n/a	n/a	Fall/Winter AM	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Hayes Valley Playground	RPD	33.29%	0.07%	Fall/Spring AM (98–110 days)	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Koshland Community Park	RPD	15.45%	0.32%	Spring/Summer AM (113-125 days)	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
John Muir Elementary School	SFUSD	n/a	n/a	Spring/Summer AM	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Page & Laguna Mini Park	RPD	50.80%	0.29%	Spr/Sum/Fall AM (57–69 days)	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Patricia's Green	RPD	18.06%	1.99%	Fall/Win/Spr AM/PM (254-266 days)	Cumulatively Considerable	Not Cumulatively Considerable	Not Cumulatively Considerable
McCoppin Hub	PW	n/a	n/a	Spr/Sum/Fall AM/PM	Cumulatively Considerable	No Contribution	No Contribution
SoMa West Skate and Dog Park	PW	n/a	n/a	Summer AM	Not Cumulatively Considerable	No Contribution	No Contribution
Future Brady Park (Proposed)	POPOS	n/a	n/a	Spr/Sum/Fall AM/PM	--	--	--

TABLE 3.F-3. SHADOW IMPACT SUMMARY – CUMULATIVE IMPACTS

Park/Open Space (Jurisdiction)	Jurisdiction	Existing Shadow	Cumulative % Increase	Cumulative Timing	CEQA Conclusion Hub Plan Contribution	CEQA Conclusion 30 Van Ness Avenue Contribution	CEQA Conclusion 98 Franklin Street Contribution
Civic Center Plaza	RPD	10.20%	0.03%	Fall/Winter AM/PM (100–112 days)	Not Cumulatively Considerable	Not Cumulatively Considerable	No Contribution
Future 11th/Natoma Park (Proposed)	RPD	22.09%	6.77%	Year-Round PM (365 days)	--	--	--
United Nations Plaza	PW	n/a	0.01%	Winter PM	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact
Howard & Langton Mini Park	RPD	41.03%	0.054%	Fall/Spring PM (84–96 days)	Cumulatively Considerable	Not Cumulatively Considerable	No Contribution
Gene Friend Recreation Center	RPD	48.29%	1.32%	Year-round AM/PM (295–307 days)	Not Cumulatively Considerable	No Contribution	No Contribution
Victoria Manalo Draves Park	RPD	6.43%	0.51%	Year-round AM/PM (365 days)	Not Cumulatively Considerable	No Contribution	No Contribution

Source: Prevision Design, 2019.
Notes:
RPD = San Francisco Recreation and Parks Department
SFRED = City and County of San Francisco Real Estate Division
SFUSD = San Francisco Unified School District
POPOS = privately owned public open space
PW = San Francisco Public Works

Jefferson Square Park (Location 1)

Cumulative net new shadow combined with the other planned projects in the vicinity would result in an increase of 0.6403 percent (5,856,508 sfh) of shadow on Jefferson Square Park, compared with an increase of 0.0002 percent (2,001 sfh) under either the Hub Plan Scenario.[25]

Under the Cumulative Scenario, additional morning shadows would also fall on the eastern half of Jefferson Square Park, year-round, affecting a point of entry, walkways, some landscaped areas, portions of the grassy areas, and three fixed benches.

The new shadows cast by the Hub Plan would fall on areas that are either transitional in nature (i.e., paved walkways, entrances) or areas with a relatively low intensity of use (i.e., grassy areas). However, under the Cumulative Scenario, the park features that would be most sensitive to the addition of shading, the three fixed benches, would be shaded. However, two of the three benches would be affected prior to 7 a.m., and the other would be shaded no later than 9 a.m.

The Hub Plan (because of the 30 Van Ness Avenue Project) would contribute 0.0002 percent of the 0.6403 percent of cumulative net new shadow for up to eight minutes per day. Therefore, the Hub Plan's minor contribution to cumulative net new shadow ***would not be cumulatively considerable***.

Patricia's Green (Location 9)

Net new shadow from the Cumulative Scenario would result in an increase of 1.99 percent (1,326,021 sfh) of shadow on Patricia's Green. This increase would result in a new annual total shadow load of 20.05 percent. Net new shadow from the Cumulative Scenario would occur within the first 160 minutes of the daily analysis period and again (at times) within the last 54 minutes of the daily analysis period between approximately August 10 and May 2. Net new shadow would affect all portions of the park at various times throughout the year.

The days of maximum net new shadow on the Patricia's Green due to the Cumulative Scenario would occur on March 8 and October 4, when the Cumulative Scenario would shade the majority of the park starting at 8:09 a.m. and be present for approximately 120 minutes. The duration of Cumulative Scenario-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 214 minutes with an average duration of about 127 minutes across all affected dates.

The largest net new shadow cast by the Cumulative Scenario would occur at 8:45 a.m. on March 1 and October 11 and cover 15,404 sf, equivalent to 86.0 percent of the total area of

---

[25] As discussed above (Impact SH-1), the 30 Van Ness Avenue Project is the only Hub Plan site that would cast net new shadow on Jefferson Square Park. Therefore, the size, amount, timing, and locations of shadow under the Hub Plan Scenario are identical to that under the 30 Van Ness Avenue Project.

Patricia's Green. Throughout the affected period the average size of shadows, when present, would be 2,496 sf (about 13.9 percent of the total park area).

Portions of Patricia's Green would receive net new shadow from the Hub Plan, as well as the Cumulative Scenario. The portions of Patricia's Green that would likely be most sensitive to the addition of net new shadow would be the children's play area, the park's fixed benches, and the tables and seating areas. All of these features would receive some net new shadow from the Hub Plan and the Cumulative Scenario, the presence of which would be noticeable to users of the park present at that time. The times for net new shadow under the Hub Plan would be in the early morning, prior to 9 a.m., when lower overall levels of use are typical. The children's play area, which could be the most sensitive to additional shadow, would not receive net new shadow after 8:30 a.m.

With additional foreseeable projects, the Cumulative Scenario would generate additional shadows that would also fall on Patricia's Green both in the morning and afternoon periods, affecting similar park areas from late summer through late spring. Areas additionally affected would be within the southern half of the park, and would include walkways, grassy areas, the children's play area, and fixed benches.

The Hub Plan would contribute 1.53 percent of the 1.99 percent of cumulative net new shadow for up to two hours per day. Therefore, the Hub Plan's contribution would be ***cumulatively considerable***.

MCCOPPIN HUB (LOCATION 10)

Because McCoppin Hub is not under the jurisdiction of RPD, this analysis qualitatively discusses the general timing of net new shadow effects. In the Cumulative Scenario, net new shadow on McCoppin Hub would be similar to shadow under the Hub Plan scenario, with the exception of an additional small amount of net new shadow that would be cast by the 1270 Market Street Project in the late afternoon over a few dates in mid-March and late September. Under the Cumulative Scenario, there would be a small amount of additional net shadow cast on McCoppin Hub, affecting a small area on the eastern edge of the park for a short duration in the late afternoon near the equinoxes. Cumulative shadows would affect a portion of the stairs and ramp walkways and would not impact any fixed seating areas. However, because the Hub Plan would result in the majority of total new cumulative shadowing on McCoppin Hub, this contribution is considered ***cumulatively considerable***.

SOMA WEST SKATE AND DOG PARK (LOCATION 11)

In the Cumulative Scenario, net new shadow would be similar to shadow under the Hub Plan scenario, with the exception of an additional small amount of net new shadow that would be cast by the 198 Valencia Street Project in the mid- to late-afternoon between mid-August and early May. At the dog park, affected areas sensitive to new shading that would receive new shadow from the Cumulative Scenario would be the grassy dog play areas and two fixed benches. In the skate park, the concrete ramp area would receive new shadow; however, these users would likely be less affected due to the small relative amount of new shadow and the fact that the space is already significantly shaded due to the freeway overhead.

The Hub Plan would contribute slightly to cumulative net new shadow impacts. The areas of net new shadow from the Hub Plan, as well as the 198 Valencia Street Project, would not be noticeable to users of the park during affected times; the park is already in shadow because of its location directly under an elevated freeway. Therefore, the Hub Plan's contribution ***would not be cumulatively considerable***.

CIVIC CENTER PLAZA (LOCATION 13)

The Cumulative Scenario would result in net new shadow cast on Civic Center Plaza, adding approximately 282,928 net new annual sfh of shadow and increasing the sfh of shadow by 0.03 percent annually above current levels.[26] This increase would result in a new annual total shadow load of 10.23 percent. Net new shadow from the Cumulative Scenario would occur for up to 170 minutes a day over three periods in the early morning, mid-, and late afternoon/evening between approximately October 26 and February 14. Net new shadow would fall only along the southern half of the park, affecting several grassy areas, several paved walkways, as well a portion of one of the two children's play areas.

The days of maximum net new shadow on the park due to the Cumulative Scenario would occur on December 20 and 21 on the southern half of the park over three periods: starting at 8:19 a.m. through just after 9 a.m., between just before 1 p.m. through just after 2:15 p.m. and just before 3:30 p.m. though the end of the daily analysis period at 3:54 p.m. The duration of Cumulative Scenario-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 170 minutes with an average duration of about 78 minutes across all affected dates.

The largest net new shadow cast by the Cumulative Scenario would occur at 8:30 a.m. on December 20 and 21 and cover 8,504 sf, equivalent to 3.8 percent of the total area of Civic Center Plaza. Throughout the affected period, the average size of shadows, when present, would be 2,266 sf (about 1.0 percent of the total park area).

The portions of Civic Center Plaza that would receive net new shadow from the Hub Plan and the Cumulative Scenario include several grassy areas, several paved walkways as well a portion of the southern children's play area, and a café kiosk. The children's play area would be considered a feature more sensitive to additional shadow and for approximately 30 minutes in the late afternoon the Cumulative Scenario would cast shadow over up to half of the playground's

[26] As discussed above, the 30 Van Ness Avenue Project is the only Hub Plan site that would cast net new shadow on Civic Center Plaza. Therefore, the size, amount, timing, and locations of shadow under the Hub Plan Scenario are identical to that under the 30 Van Ness Avenue Project.

area. Other features receiving new shading could be characterized as being of lower sensitivity due to the fact their use is either typically transitory in nature (walkways) or are features that are similar to many other nearby areas in the park (grassy areas) that would be unshaded at the times affected by net new shadow from the Hub Plan.

Under the Cumulative Scenario, other foreseeable project would add additional early morning, as well as late afternoon, winter shadow would also fall on the southern half of the park. Cumulative shadow would affect several grassy areas, paved walkways, a portion of the café kiosk eating area, and approximately the southern two-thirds of the southern children's play area. On the winter solstice (December 20), net new cumulative shadow would be present on the café kiosk eating area for a few minutes around 9 a.m., and on the play area for a few minutes prior to 9 a.m. and again starting around 3:40 p.m. and be lasting through the end of the analysis period at 3:54 p.m. (approximately 15 minutes).

The Hub Plan (due to the 30 Van Ness Avenue Project) would contribute 0.004 percent of the 0.03 percent of cumulative net new shadow for up to 90 minutes per day. Therefore, the Hub Plan's contribution ***would not be cumulatively considerable***.

HOWARD & LANGTON MINI PARK (LOCATION 16)

The Cumulative Scenario would result in net new shadow cast on the Howard and Langton Mini Park, adding approximately 20,590 net new annual sfh of shadow and increasing the sfh of shadow by 0.054 percent annually above current levels. This increase would result in a new annual total shadow load of 41.079 percent. Net new shadow from the Hub Plan would occur for up to 17 minutes a day in the late afternoon between February 16 and April 4 and again between September 7 and October 24. Net new shadow would be cast over a small northern section of the park.

The days of maximum net new shadow on the park due to the Cumulative Scenario would occur on March 8 and October 4 for about 15 minutes near 5:30 p.m. The duration of Cumulative Scenario-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 17 minutes with an average duration of about 13 minutes across all dates. The largest net new shadow cast by the Cumulative Scenario would occur at 6:09 p.m. on September 20 and March 22 and cover 1,856 sf, equivalent to 18.2 percent of the total area of the Howard and Langton Mini Park. Throughout the affected period, the average size of shadows, when present, would be 1,210 sf (about 11.8 percent of the total park area).

The portions of Howard and Langton Mini Park that would receive net new shadow from the Hub Plan, and under the Cumulative Scenario, would include the public point of entry and portions of the community garden. Although some users of the community garden may notice the presence of a small amount of net new shadow if they were to be present during the affected period, the short duration and limited number of dates annually of net new shadow would be unlikely to affect the use and enjoyment of the park or make any impact on plant health and growth. Under the Cumulative Scenario, additional late afternoon shadows would fall on a small northern section of the park from mid-winter through mid-spring and again in the fall, affecting a small portion of the community garden area.

The Hub Plan would contribute 0.034 percent of the 0.054 percent cumulative net new shadow, which equates to approximately 63 percent of the total net new shadow. Therefore, the Hub Plan's contribution would be ***cumulatively considerable***.

GENE FRIEND RECREATION CENTER (LOCATION 17)

Cumulative net new shadow from the Hub Plan combined with the other planned projects in the vicinity would result in an increase of 1.324 percent (2,185,557 sfh) of shadow on the Gene Friend Recreation Center. This increase would result in a new annual total shadow load of 49.6175 percent. Net new shadow from the Cumulative Scenario would occur for up to 230 minutes a day in the early morning as well as the late afternoon between January 19 and November 21.

The days of maximum net new shadow on the park due to the Cumulative Scenario would occur on May 17 and July 26 when morning shadow would be cast starting at 7:07 a.m. through just after 9 a.m. and again starting just prior to 6 p.m. through the end of the daily analysis period at 7:25 p.m. The duration of the Cumulative Scenario-generated net new shadow would vary throughout the year, with net new shadow lasting between zero and 230 minutes with an average duration of about 116 minutes across all affected dates. The largest net new shadow cast by the Cumulative Scenario would occur at 7:57 a.m. on September 20 and March 22 and cover 17,533 sf, equivalent to 39.5 percent of the total area of Gene Friend Recreation Center. Throughout the affected period, the average size of shadows, when present, would be 4,286 sf (about 9.7 percent of the total park area).

The portions of Gene Friend Recreation Center that would receive net new shadow from the Hub Plan would include a small portion of the basketball court. Under the Cumulative Scenario, although more of the park's area and features would be shaded, shading would occur during early morning hours, prior to the opening of the park.

The Hub Plan would contribute 0.0004 percent of the 1.324 percent of cumulative net new shadow for up to six minutes per day. Therefore, the Hub Plan's contribution ***would not be cumulatively considerable***.

VICTORIA MANALO DRAVES PARK (LOCATION 18)

Cumulative net new shadow from the Cumulative Scenario combined with the other planned projects in the vicinity would result in an increase of 0.51 percent (2,078,646 sfh) of shadow on Victoria Manalo Draves Park. This increase would result in a new annual total shadow load of 6.94 percent. Net new shadow from the Cumulative Scenario would occur for between 34 and 118 minutes a day in the early morning as well as the late afternoon year-round.

The day of maximum net new shadow on the park due to the Cumulative Scenario would occur on June 21, when morning shadow would be cast starting just prior to 5:45 p.m. though the end of the daily analysis period at 7:36 p.m. The duration of Cumulative Scenario-generated net new shadow would vary throughout the year, with net new shadow lasting between 34 and 118 minutes, with an average duration of about 74 minutes across all affected dates. The largest net new shadow cast by the Cumulative Scenario would occur at 7:36 p.m. on June 7 and July 5 and cover 22,158 sf, equivalent to 20.1 percent of the total area of Victoria Manalo Draves Park. Throughout the year, the average size of shadows, when present, would be 4,966 sf (about 4.5 percent of the total park area).

Under the Cumulative Scenario, additional mid-spring and late summer shadow would fall on Victoria Manalo Draves Park in the morning and shadows would also fall year-round in late afternoon. Areas affected by this shadow include the main park entry, portions of the basketball court, walkways, grassy areas, a small portion of the children's play area, seven fixed benches and one picnic table. Net new cumulative shadow would occur for up to one hour and 45 minutes in the early morning and up to one hour and 45 minutes the late afternoon year-round.

The Hub Plan would contribute 0.01 percent of the 0.51 percent of cumulative net new shadow for up to nine minutes per day. Therefore, the Hub Plan's contribution ***would not be cumulatively considerable***.

PUBLIC STREETS AND SIDEWALKS

Sidewalks in the Hub Plan area are already shadowed in the morning and afternoon by densely developed, multistory buildings. Although implementation of the Hub Plan and nearby cumulative development projects would add net new shadow to the streets and sidewalks in the area, these shadows would be transitory in nature, would not substantially affect the use of the streets and sidewalks, and would not increase shadows above levels that are common and generally expected in a densely developed urban environment. The Hub Plan would not combine with past, present, and reasonably foreseeable future projects in the Hub Plan area to create a significant cumulative shadow impact on streets and sidewalks. The contribution from the Hub Plan ***would not be cumulatively considerable***.

CONCLUSIONS

As discussed above, the Hub Plan would contribute to a significant cumulative impact on several parks. For most parks where there would be a contribution, the Hub Plan would not result in a cumulatively considerable impact. However, the Hub Plan would make a cumulatively considerable contribution to the shadow on Patricia's Green, McCoppin Hub, and Howard and Langton Mini Park, resulting in a ***significant*** impact.

Mitigation Measures

There are no feasible mitigation measures that would reduce shadow impacts from the Hub Plan on Patricia's Green, McCoppin Hub, and Howard and Langton Mini Park.

Significance After Mitigation

Because no mitigation measures would reduce these cumulatively considerable contributions to a less-than-significant level, the cumulative impact on these parks would be ***significant and unavoidable***.

Impact C-SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in cumulatively considerable shadow impacts. (Less than Significant)

The following parks and open spaces, as analyzed in Impact SH-2, above, would not be affected by any net new shadow under the Cumulative Scenario because no other reasonably foreseeable projects would shadow these open space areas in combination with shadowing from the 30 Van Ness Avenue Project and the 98 Franklin Street Project: Margaret Hayward Playground, Buchanan Street Mall, Ella Hill Hutch Center, Hayes Valley Playground, Koshland Community Park, John Muir Elementary School, Page and Laguna Mini Park, McCoppin Hub, SoMa West Skate and Dog Park, the future Brady Park, the future 11th/Natoma Park, United Nations Plaza, Gene Friend Recreation Center, and Victoria Manalo Draves Park. Therefore, there would be ***no cumulative shadow impact*** related to these parks, and no further analysis is required.

As shown in **Table 3.F-3**, p. 3.F-73, the 30 Van Ness Avenue Project would contribute to a cumulative shadow impact on Jefferson Park Square, Patricia's Green, Civic Center Plaza, Howard and Langton Mini Park, and public streets and sidewalks. The 98 Franklin Street Project would contribute to cumulative shadow impacts at Patricia's Green and to public streets and sidewalks. The contribution to these cumulative shadow impacts from the 30 Van Ness Avenue Project and the 98 Franklin Street Project are discussed further below.

JEFFERSON SQUARE PARK (LOCATION 1)

30 Van Ness Avenue Project. As discussed above, the 30 Van Ness Avenue Project is the only Hub Plan site that would cast net new shadow on Jefferson Square Park. Therefore, the size, amount, timing, and locations of shadow under the 30 Van Ness Avenue Project are identical to that under the Hub Plan Scenario. Refer to Impact C-SH-1, above, for the full analysis. The 30 Van Ness Avenue Project would contribute 0.0002 percent of the 0.6403 percent of cumulative net new shadow for up to eight minutes per day. Therefore, the 30 Van Ness Avenue Project's contribution ***would not be cumulatively considerable***.

98 Franklin Street Project. The 98 Franklin Street Project would not cast any shadow on Jefferson Square Park and, thus, would ***not contribute*** to cumulative shadow impacts at this location.

PATRICIA'S GREEN (LOCATION 9)

As explained above under Impact C-SH-1, net new shadow from the Cumulative Scenario would result in an increase of 1.99 percent (1,326,021 sfh) of shadow on Patricia's Green. This increase would result in a new annual total shadow load of 20.05 percent. Net new shadow from the Cumulative Scenario would occur within the first 160 minutes of the daily analysis period and again (at times) within the last 54 minutes of the daily analysis period between approximately August 10 and May 2. Net new shadow would affect all portions of the park at various times throughout the year. The portions of Patricia's Green that would likely be most sensitive to the addition of net new shadow would be the children's play area, the park's fixed benches, and the tables and seating areas.

30 Van Ness Avenue Project. Portions of Patricia's Green would receive net new shadow from the 30 Van Ness Avenue Project as well as the Cumulative Scenario. The times for net new shadow under the 30 Van Ness Avenue Project would be in the early morning, prior to 9 a.m. The children's play area, which could be the most sensitive to additional shadow, would not receive net new shadow at any point after 8:30 a.m. The 30 Van Ness Avenue Project would contribute 0.36 percent of the 1.99 percent of cumulative net new shadow for up to 46 minutes per day. Therefore, the 30 Van Ness Avenue Project's contribution ***would not be cumulatively considerable***.

98 Franklin Street Project. Portions of Patricia's Green would receive net new shadow from the 98 Franklin Street Project, as well as the Cumulative Scenario. The time for net new shadow under the 98 Franklin Street Project would be in the early morning, prior to 9 a.m. The children's play area, which could be the most sensitive to additional shadow, would not receive net new shadow at any point after 8:30 a.m. The 98 Franklin Street Project would contribute 0.39 percent of the 1.99 percent of cumulative net new shadow for up to 46 minutes per day. Therefore, the 98 Franklin Street Project's contribution ***would not be cumulatively considerable***.

CIVIC CENTER PLAZA (LOCATION 13)

30 Van Ness Avenue Project. As discussed above, the 30 Van Ness Avenue Project is the only Hub Plan site that would cast net new shadow on Civic Center Plaza. Therefore, the size, amount, timing, and locations of shadow under the Hub Plan Scenario are identical to that under the 30 Van Ness Avenue Project. Refer to Impact C-SH-1, above, for the full analysis. As with the Hub Plan, the 30 Van Ness Avenue Project would contribute 0.004 percent of the 0.03

percent of cumulative net new shadow for up to 90 minutes per day. Therefore, the 30 Van Ness Avenue Project's contribution ***would not be cumulatively considerable***.[27]

98 Franklin Street Project. The 98 Franklin Street Project would ***not contribute*** to cumulative shadow impacts on Civic Center Plaza.

HOWARD & LANGTON MINI PARK (LOCATION 16)

30 Van Ness Avenue Project. As explained above under Impact C-SH-1, the Cumulative Scenario would result in net new shadow cast on the Howard and Langton Mini Park, adding approximately 20,590 net new annual sfh of shadow and increasing the sfh of shadow by 0.054 percent annually above current levels. This increase would result in a new annual total shadow load of 41.079 percent. The portions of Howard and Langton Mini Park that would receive net new shadow from the 30 Van Ness Avenue Project, and under the Cumulative Scenario, would include the public point of entry and portions of the community garden. Under the Cumulative Scenario, additional late afternoon shadows would fall on a small northern section of the park from mid-winter through mid-spring and again in the fall, affecting a small portion of the community garden area. The 30 Van Ness Avenue Project would contribute to the cumulative shadow impacts. However, the contribution would be 0.004 percent of the cumulative net new shadow. Therefore, the 30 Van Ness Avenue Project's contribution ***would not be cumulatively considerable***.

98 Franklin Street Project. The 98 Franklin Street Project ***would not contribute*** to cumulative shadow impacts on the Howard and Langton Mini Park.

PUBLIC STREETS AND SIDEWALKS

Sidewalks in the Hub Plan area are already shadowed in the morning and afternoon by densely developed, multistory buildings. Although implementation of the 30 Van Ness Avenue Project and the 98 Franklin Street Project, as well as nearby cumulative development projects, would add net new shadow to the streets and sidewalks in the area, these shadows would be transitory in nature, would not substantially affect the use of the streets and sidewalks, and would not increase shadows above levels that are common and generally expected in a densely developed urban environment. The 30 Van Ness Avenue Project and the 98 Franklin Street Project would not combine with past, present, and reasonably foreseeable future projects in the Hub Plan area to create a significant cumulative shadow impact on streets and sidewalks. The contribution from

---

[27] Prevision Design. 2019. Memorandum to Alana Callagy, San Francisco Planning Department. "Changes in shadow effects of the revised 30 Van Ness Avenue Project on Civic Center Plaza relative to the prior version of the 30 Van Ness Avenue Project analyzed in the Shadow analysis report for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD) EIR (February 11, 2019)." February 2019.

the 30 Van Ness Avenue Project and the 98 Franklin Street Project ***would not be cumulatively considerable***.

CONCLUSIONS

As discussed above, the 30 Van Ness Avenue Project and the 98 Franklin Street Project would not result in a cumulative contribution to most parks in the area. However, the 30 Van Ness Avenue Project would contribute to a cumulative shadow impact on Jefferson Park Square, Patricia's Green, Civic Center Plaza, Howard and Langton Mini Park, and public streets and sidewalks. The 98 Franklin Street Project would contribute to a cumulative shadow impact on Patricia's Green and public streets and sidewalks. However, these contributions would not be cumulatively considerable. The impacts from the 30 Van Ness Avenue Project and the 98 Franklin Street Project, along with other reasonably foreseeable projects, would be ***less than significant***.

4. OTHER CEQA CONSIDERATIONS

The California Environmental Quality Act (CEQA) Guidelines section 15126 requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the environmental impact report (EIR) must also identify (1) significant environmental effects of the proposed project, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, (4) growth-inducing impacts of the proposed project, (5) mitigation measures proposed to minimize the significant effects, and (6) alternatives to the proposed project.[1]

A. SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

The Summary chapter and Sections 3.A through 3.F of this EIR provide a comprehensive summary of the environmental effects of the Hub Plan,[2] the two individual development projects, streetscape and street network improvements, and the Hub Housing Sustainability District (HSD), including the levels of significance both before and after mitigation. **Table S-1**, p. S-12, and **Table S-2**, p. S-58, summarize the impacts identified in the EIR and the initial study, respectively (see Summary chapter).

B. SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

CEQA Guidelines section 15126.2(b) requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. Development of the Hub Plan, the two individual development projects, and the Hub HSD would result in the significant and unavoidable project-related and cumulative impacts discussed below and further discussed in Sections 3.A, Cultural Resources; 3.B, Transportation and Circulation; 3.C, Noise and Vibration; 3.D, Air Quality; 3.E, Wind; and 3.F, Shadow.

1 Mitigation measures proposed to minimize significant effects are discussed in each topical section of the initial study and Chapter 3 of this EIR; alternatives to the proposed project are discussed in Chapter 5, Alternatives.

2 The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

CULTURAL RESOURCES

- The Hub Plan could cause a substantial adverse change in the significance of individual built environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code. (Impact CUL-1)
- The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built environment resources. (Impact C-CUL-1)

TRANSPORTATION AND CIRCULATION

- During construction, the Hub Plan would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling; or substantially delay public transit. (Impact TR-1)
- The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off-street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people bicycling, or people walking. (Impact TR-8)
- The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts. (Impact C-TR-1)
- The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative loading impacts. (Impact C-TR-7)

NOISE

- During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards. (Impact NOI-1)
- Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards. (Impact C-NOI-1)

AIR QUALITY

- During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-5)
- The Hub Plan would result in emissions of fine particulate matter (particulate matter 2.5 microns in diameter or less [$PM_{2.5}$]) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. (Impact AQ-7)
- The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions. (Impact C-AQ-1)

WIND

- The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts. (Impact C-WI-1)

SHADOW

- The Hub Plan would create new shadow in a manner that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. (Impact SH-1)
- The Hub Plan, in combination of past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts. (Impact C-SH-1)

C. SIGNIFICANT IRREVERSIBLE CHANGES

In accordance with CEQA section 21100(b)(2)(B) of the CEQA Statute and CEQA Guidelines section 15126.2(c), an EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. This may include current or future uses of non-renewable resources, secondary or growth-inducing impacts that commit future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. According to the CEQA Guidelines, irretrievable commitments of resources should be evaluated to ensure that such consumption is justified. In general, irreversible commitments include energy consumed and materials used during construction of a proposed project as well as the energy and natural resources (notably, water) required to sustain the project and its inhabitants or occupants over the usable life of the project.

The consumption of nonrenewable resources includes conversion of agricultural lands and lost access to mining reserves. As discussed in the initial study (Appendix B), the Hub Plan area is urbanized and in an area of San Francisco that is identified by the California Department of Conservation as "Urban and Built-up Land" that does not fall under any of the "Farmland" classifications. Therefore, no existing agricultural lands would be converted to non-agricultural uses. In addition, the Hub Plan area does not contain known mineral resources and does not serve as a mining reserve; therefore, development of the proposed Hub Plan would not result in the loss of access to mining reserves.

No significant environmental damage, such as accidental spills or explosions of hazardous materials, is anticipated with implementation of the proposed plan. Compliance with federal, state, and local regulations would ensure that this potential impact would be reduced to a less-than-significant level.

Subsequent development projects under the proposed Hub Plan and Hub HSD, and the two specific development projects would be required to demonstrate compliance with the performance standards outlined in the Maher Ordinance, including the preparation of a site-specific mitigation plan, subject to review and approval by the San Francisco Department of Public Health. As such, no irreversible changes related to hazardous substances would result from implementation of the proposed plan.

The Hub Plan is a regulatory program. It would result in changes to current zoning controls that are applicable in the Hub Plan area to encourage additional housing, safer and more walkable streets and public spaces, and a range of land uses and services in the neighborhood. Under the proposed zoning, there would be two zoning districts, Downtown General Commercial (C-3-G) and Public (P), and the Van Ness and Market Downtown Residential Special Use District (SUD) would be expanded to encompass the entire Hub Plan area. All sites in the Hub Plan area would continue to be zoned for residential and active commercial uses on the ground floor. In addition, the existing prohibition on certain nonresidential uses above the fourth floor would be eliminated. However, the SUD residential-to-nonresidential ratio would remain. In addition, the proposed zoning under the Hub Plan would allow for additional height at the two major intersections (Market Street and Van Ness Avenue and Mission Street and South Van Ness Avenue), with proposed maximum height limits ranging from 250 to up to 650 feet at these intersections. This proposed zoning would also increase maximum height limits at other select sites throughout the Hub Plan area. Specific changes to height limits under the Hub Plan are shown in **Table 2-1**, p. 2-24. If all of the sites identified in **Table 2-1** were to be developed to the proposed maximum height limit, the changes would result in approximately 8,100 new residential units (approximately 15,700 new residents) compared with existing conditions. This estimate also assumes an extra 15 percent increase in the number of proposed units to account for potential density bonuses allowed by either state or local regulations.

Designation of the Hub HSD is a procedural change that may reduce the time required for approval of projects that satisfy all of the requirements of the HSD ordinance. The Hub Plan and Hub HSD themselves would not result in immediate physical changes to the environment and, thus, would not immediately result in physical impacts related to a commitment of nonrenewable resources. However, implementation of subsequent development projects under the Hub Plan and Hub HSD, as well as the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would commit future generations to an irreversible commitment of energy during construction and operations, including energy produced from nonrenewable resources. Such resources would include energy for lighting, heating and cooling buildings, operating automobiles and trucks, and operating computers, appliances, and other equipment in Hub Plan area buildings. Implementation of the Hub Plan and Hub HSD would also require an ongoing commitment of potable water for building occupants and landscaping. The Hub Plan proposes to make improvements to major streets and alleys in the Hub Plan area, with one of the goals being to create a safer transportation experience for everyone. This would promote transit use, walking, and bicycling, thereby reducing transportation-related energy consumption in the Hub Plan area. Future projects would be required to incorporate green building features, consistent with the Green Building Ordinance, to reduce greenhouse gas (GHG) emissions. As discussed in the initial study, the Hub Plan would not result in any significant impacts associated with an increase in GHG emissions or conflict with measures adopted for the purpose of reducing such emissions because it would be compliant with the City and County of San Francisco's (City's) Greenhouse Gas Reduction Strategy. In addition, the Hub Plan would not require the construction of major utility lines to deliver energy or natural gas because these services are already provided in the area.

Regarding the individual development projects, the 30 Van Ness Avenue Project would meet all City requirements, including compliance with GreenPoint or Leadership in Energy and Environmental Design (LEED) Gold standards. The building envelope as well as the heating, ventilation, and air-conditioning systems would be designed and optimized together to improve energy efficiency, thermal comfort, and natural lighting. The proposed project at 98 Franklin Street would either seek LEED certification or meet the applicable GreenPoint requirements, which include measures that would be applicable to both construction and operation of the proposed project. Both of the proposed development projects would be required to include a Transportation Demand Management Program, which would reduce the amount of energy used for transportation in the project area, and incorporate sustainability features, such as stormwater and rainwater collection features or a wastewater treatment system.

Demolition and construction of subsequent development projects in the Hub Plan area and the Hub HSD, as well as the two individual development projects, would also require the consumption of other nonrenewable or slowly renewable resources such as steel, aluminum, other metals, concrete, masonry materials, lumber, sand and gravel, asphalt, other building materials, and water. Projects under the Hub Plan would irreversibly use water and solid waste landfill resources. Because subsequent development projects under the Hub Plan and Hub HSD, as well as the two individual development projects, would be required to comply with California Code of Regulations title 24, the California Green Building Standards Code, and the City's Green Building Ordinance, future buildings would use less energy and water over their lifetimes than comparable buildings that were not built to the standards. Therefore, subsequent development projects under the Hub Plan and Hub HSD, as well as the two individual development projects, would not use non-renewable resources in an inefficient manner.

D. Growth Inducement

The CEQA Guidelines require that an EIR evaluate the growth-inducing impacts of a proposed action (section 15126.2(d)). A growth-inducing impact is defined in CEQA Guidelines section 15126.2(d) as:

> *"[T]he 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. Included in this are projects which would remove obstacles to population growth … It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."*

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involved construction of new housing that would result in new residents moving to the area. A project can have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial, governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service (e.g., a wastewater treatment facility). Increases in population could strain existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The CEQA Guidelines also require analysis of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

As described in the Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, the Hub Plan is a regulatory program. It involves changes to current zoning controls that are applicable to the Hub Plan area as well as height and bulk districts for select sites in the Hub Plan area to incentivize housing. In addition, the Hub HSD would allow for ministerial approval of projects if certain criteria are met, allowing for faster approval of qualified housing projects. The two individual development projects at 30 Van Ness Avenue and 98 Franklin Street are private development projects that include housing, retail, office space, and institutional uses (i.e., the French American International School [FAIS]). The Hub Plan, Hub HSD, and the two individual development projects would induce growth by constructing new housing units. Development under the Hub Plan could result in housing for up to 15,700 new city residents, assuming an occupancy rate of 1.94 people per unit in the proposed 8,100 new units (see Section E.3, Population and Housing, of the initial study, Appendix B). This total includes the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, which would result in housing for a combined total of approximately 1,654 residents. The Hub Plan could also result in up to approximately 275 new jobs. Although the number of jobs anticipated as a result of the 30 Van Ness Avenue and 98 Franklin Street projects (1,534) surpasses the total number of jobs for the entire Hub Plan area (275), it is expected that other sites throughout the Hub Plan area that currently include non-residential uses (and, therefore, jobs) would, over time, be replaced with residential uses, resulting in an overall net increase of approximately 275 jobs area-wide. The potential population growth under the Hub Plan represents approximately 7.6 percent of the city's population growth, based on a citywide occupancy rate of 2.23 persons per unit. These people will be residing in the 92,480 new residential units that are anticipated citywide by 2040.[3]

Although implementation of the Hub Plan would increase development capacity, the Hub Plan's policies and regulations would be within an area of the city (i.e., Market-Octavia/Upper Market) that has been designated a Priority Development Area by the Association of Bay Area Governments (ABAG) in Plan Bay Area.[4] Likewise, the two individual development projects are within this Priority Development Area. Also, as discussed in Section E.3, Population and Housing, of the initial study (Appendix B), the San Francisco General Plan recommends the Hub Plan area as an appropriate location for high-density housing to help meet the city's short-term and long-term housing goals.

Plan Bay Area is a long-range (i.e., through 2040), integrated transportation and land use/housing strategy for the San Francisco Bay Area. Plan Bay Area provides a strategy for meeting 80 percent of the region's future housing needs in Priority Development Areas. These are locally identified infill development opportunity areas within existing communities that are primed for an environment that is friendly to people walking and people bicycling and served by transit. Plan Bay Area grew out of the California Sustainable Communities and Climate

---

[3] Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 2013, p. 55, http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf, accessed December 5, 2018.

[4] San Francisco County Transportation Authority, Priority Development Areas in San Francisco, https://www.sfcta.org/sites/default/files/content/Programming/OBAG/OBAG_SF_PDAs_031417.pdf, accessed December 5, 2018.

Protection Act of 2008 (Senate Bill 375), which requires each of the state's 18 metropolitan areas, including the Bay Area, to reduce GHG emissions from vehicles, including light trucks. Thus, the Hub Plan seeks to accommodate future housing growth, as well as uses that accommodate residential and employment uses, in a part of San Francisco that is accessible to regional transit (Bay Area Rapid Transit, San Francisco Municipal Railway, and bus) and adjacent to existing job centers in downtown and along Van Ness Avenue.

Population and employment growth in San Francisco has been anticipated by the City, based on projections contained within and consistent with Plan Bay Area. The Hub Plan implements the growth that is already anticipated in ABAG projections. The two individual development projects at 30 Van Ness Avenue and 98 Franklin Street are also aligned with the strategies included in Plan Bay Area. These projects would add housing and accommodate uses in the Hub Plan area. The overarching objectives of the Hub Plan are to encourage housing, including affordable housing; create safer and more walkable streets, as well as welcoming and active public spaces; increase transportation options; and create a neighborhood with a range of uses and services to meet neighborhood needs. The Hub Plan would achieve this through changes to height and bulk districts for select sites to allow more housing. Modifications to land use zoning controls would also allow more flexibility for development of nonresidential uses, specifically, office, institutional, art, and public uses. The Hub HSD would complement these goals by allowing for faster approval of qualified housing projects. Although adoption and implementation of the Hub Plan and Hub HSD could remove some impediments to the future population and employment growth forecast for San Francisco, the City has already planned for this growth. Furthermore, the Hub Plan would accommodate this growth in a more sustainable way (i.e., near transit) compared with the possibility of diverting housing and employment growth to outlying portions of the Bay Area with lower density and less access to local and regional transit.

Plan Bay Area declares that in order to meet the Bay Area's GHG emissions reduction and housing targets and make progress toward meeting other adopted performance targets, future job and population growth should occur in established communities with access to existing or planned transportation investments. The Hub Plan and Hub HSD, as well the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street, encourage city-centered growth in a transit-rich area. Therefore, the Hub Plan, Hub HSD, and the two individual development projects are consistent with Plan Bay Area objectives to direct growth in Priority Development Areas, which will reduce GHG emissions from otherwise-expected growth.

The physical environmental effects from implementing the objectives and policies of the Hub Plan and Hub HSD, as well as those of the two individual development projects, including proposed changes to bulk and height limits and land use, are described in the initial study and Chapter 3, Environmental Setting, Impacts, and Mitigation Measures.

E. Areas of Known Controversy and Issues to Be Resolved

The public has expressed some concerns about the Hub Plan, the two individual development projects, and the Hub HSD that are related to the environmental topics reviewed in this EIR and initial study. The public comments are in response to the notice of availability of the NOP for an EIR and the Notice of Public Scoping Meeting for the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub HSD that the San Francisco Planning Department issued on May 23, 2018. Notices were mailed to other City departments, neighborhood groups, other public agencies, and interested parties to announce a meeting where the public could comment on the scope of this EIR's environmental analysis. The meeting was held within the Hub Plan area on June 12 from 6 until 8 p.m. at 170 Otis Street, First Floor, Born Auditorium. Two members of the public made oral comments, which have been documented and addressed in the applicable sections of the EIR or initial study. Written comments on the NOP were accepted during a 30-day period from May 23 until June 22, 2018; a total of five comment letters were received. The NOP and comments received on the NOP are included in Appendix A.

Potential areas of controversy and unresolved issues for the proposed project, as mentioned in the comments, include:

- **Transportation and Circulation**: Comments raised concerns about the use of vehicle miles traveled as a threshold of significance; loading impacts from transportation network companies and delivery companies on people walking and people biking; and impacts on transit and parking. Refer to Section 3.B, Transportation and Circulation.
- **Wind:** Comments raised concerns about the potential impacts of wind on people walking and people biking. Refer to Section 3.E, Wind.
- **Alternatives:** Comments raised concerns about the consideration of alternatives. Refer to Chapter 5, Alternatives.

This Page Intentionally Left Blank

5. ALTERNATIVES

ORGANIZATION OF THIS CHAPTER

This chapter is divided into four main sections. The first section, "Introduction," is an introductory section that describes the project objectives. The next section, "Description of Alternatives Selected," provides a detailed description of each of the selected alternatives. The next section, "Alternatives Analysis," presents a detailed analysis and evaluation of the environmental impacts of each of the alternatives, then compares them to existing conditions, to those of the proposed project, and relative to each other. The section is organized by resource topic; where the impacts for two or more alternatives are the same, the discussions are combined. The last section, "Comparison of Alternatives and Environmentally Superior Alternative," identifies the environmentally superior alternative, based on the described analysis, and discusses alternative concepts that were considered but rejected from further study and the reasons for elimination.

A. INTRODUCTION

This chapter presents the alternatives analysis as required by the California Environmental Quality Act (CEQA) for the Hub Plan,[1] 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District (HSD). The discussion includes the methodology used to select alternatives to the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub HSD for detailed CEQA analysis, with the intent of developing potentially feasible alternatives that could avoid or substantially lessen the significant impacts identified while still meeting most of the project's basic objectives. This chapter identifies a reasonable range of alternatives that meet these criteria and evaluates them for their comparative merits with respect to minimizing adverse environmental effects.

CEQA REQUIREMENTS FOR ALTERNATIVES ANALYSIS

The CEQA Guidelines, section 15126.6(a), state that an environmental impact report (EIR) must describe and evaluate a reasonable range of alternatives to a proposed project that would feasibly attain most of the project's basic objectives but avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a proposed project or alternatives that are infeasible. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

---

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. Specifically, the CEQA Guidelines set forth the following additional criteria for selecting and evaluating:

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if the alternatives would impede to some degree the attainment of project objectives or be more costly. (section 15126.6(b))
- The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and avoid or substantially lessen one or more of the significant effects. (section 15126.6(c))
- The specific alternative of "no project" shall also be evaluated along with its impact. (section 15126.6(e)(1))
- The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR needs to examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner that fosters meaningful public participation and informed decision-making. (section 15126.6(f))

ALTERNATIVES SELECTION

As discussed above, the alternatives to the proposed project are meant to feasibly attain most of the basic project objectives while avoiding or substantially lessening significant impacts. The project objectives of each component of the proposed project are summarized below for use in the identification, selection, and evaluation of alternatives. Refer to Chapter 2, Project Description, for a complete list of project objectives.

The Hub Plan objectives are to create a vibrant mixed-use neighborhood; maintain a strong preference for housing; encourage residential towers on selected sites; establish a functional, attractive, and well-integrated system of public streets and open spaces; reconfigure major streets and intersections for safety; and take advantage of opportunities to create public spaces.

The main objectives for the Hub HSD are to allow for ministerial approval of housing projects in the Hub Plan area and streamline their environmental review.

The main objectives for the 30 Van Ness Avenue Project are to create a high-density, mixed-use development that takes advantage of its prominent downtown location and contributes to the general plan housing element goals related to affordable housing; transform and enliven Market Street/Van Ness Avenue; develop an underused site that connects the Civic Center, Mid-Market, and Hayes Valley neighborhoods; create office space that is modern, creative, and functional as well as a residential tower design that maximizes views for residents; and provide adequate vehicular parking and loading access.

The project objectives for the school component of the 98 Franklin Street Project are to develop a new high school building for the International High School in proximity to the French American International School's (FAIS's) other campus buildings and public transportation; replace an underutilized site with a vibrant mixed-use development, including an educational institution of long standing in the city; leverage the value of the 98 Franklin Street property by partnering with a residential developer to build housing in the air space above the school; and develop a project that enhances the larger community and generally conforms to the objectives and policies of the Hub Plan. The project objectives for the residential component of the 98 Franklin Street Project are to assist FAIS in developing a new building for the International High School on the lower five floors of the site; increase the supply of housing near Van Ness Avenue/Market Street; construct a substantial number of dwelling units that contribute to general plan housing element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for the city; and create a mixed-use project that is generally consistent with the land use, housing, open space, and other objectives and policies of the Hub Plan.

Summary of Significant Impacts

The EIR identified significant impacts associated with cultural resources, transportation and circulation, noise and vibration, air quality, wind, and shadow that would result from the proposed project (see Chapter 3, Environmental Setting and Impacts). Thirteen of the proposed project's significant impacts would be mitigated to a less-than-significant level with implementation of proposed mitigation measures, as identified below. Nine significant impacts of the proposed project would remain significant and unavoidable, even with implementation of mitigation measures. In addition, the EIR identifies five impacts that would be significant and unavoidable where mitigation is not feasible.

Cultural Resources

- Impact CUL-1. The Hub Plan could cause a substantial adverse change in the significance of individual built-environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-CUL-1a through M-CUL-1f.
- Impact CUL-3. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of an individual built-environment resource and/or historic district, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code, from ground-borne vibration caused by temporary construction activities.

The impact would be reduced to less than significant with Mitigation Measures M-NOI-3a and M-NOI-3b.

- Impact CUL-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could cause a substantial adverse change in the significance of an archaeological resource, as defined in section 15064.5. The impact would be reduced to less than significant with Mitigation Measures M-CUL-4a through M-CUL-4d.
- Impact CUL-5. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could disturb human remains, including those interred outside of formal cemeteries. The impact would be reduced to less than significant with Mitigation Measures M-CUL-4a through M-CUL-4d.
- Impact C-CUL-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built-environment resources. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-CUL-1a through M-CUL-1f.
- Impact C-CUL-3. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, could result in a significant cumulative impact on archaeological resources and human remains. The impact would be reduced to less than significant with Mitigation Measures M-CUL-4a through M-CUL-4d.

TRANSPORTATION AND CIRCULATION

- Impact TR-1. During construction, the Hub Plan would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving or interfere with accessibility for people walking or bicycling or substantially delay public transit. The impact would be significant and unavoidable, even with implementation of Mitigation Measure M-TR-1.
- Impact TR-8. The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people bicycling, or people walking. The impact would be significant and unavoidable. There is no feasible mitigation available to reduce this impact.
- Impact C-TR-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts. The impact would be significant and unavoidable, even with implementation of Mitigation Measure M-TR-1.
- Impact C-TR-7. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant

cumulative loading impacts. The impact would be significant and unavoidable**.** There is no feasible mitigation available to reduce this impact.

NOISE AND VIBRATION

- Impact NOI-1. During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area, in excess of standards. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-NOI-1a and M-NOI-1b.
- Impact NOI-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards. The impact would be reduced to less than significant with Mitigation Measure M-NOI-1a.
- Impact NOI-3. Construction of the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would generate excessive ground-borne vibration or ground-borne noise levels. The impact would be reduced to less than significant with Mitigation Measures M-NOI-3a and M-NOI-3b.
- Impact NOI-4. During operation, the Hub Plan would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area, in excess of standards. The impact would be reduced to less than significant with Mitigation Measure M-NOI-4.
- Impact C-NOI-1. Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in a substantial temporary or permanent increase in ambient noise levels in excess of standards. The impact would be significant and unavoidable. No additional mitigation measures beyond M-NOI-1a and M-NOI-1b have been identified.
- Impact C-NOI-3. Operation of the Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area, in excess of standards. The impact would be reduced to less than significant with Mitigation Measure M-NOI-4.

AIR QUALITY

- Impact AQ-4. During construction, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. The impact would be reduced to less than significant with Mitigation Measures M-AQ-4a and M-AQ-4b.

- Impact AQ-5. During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-AQ-5a through M-AQ-5c.
- Impact AQ-7. The Hub Plan would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-AQ-5c and M-AQ-7a through M-AQ-7e.
- Impact AQ-9. During construction and operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. The impact would be reduced to less than significant with Mitigation Measures M-AQ-5c, M-AQ-9a, M-AQ-9b, and M-AQ-9c.
- Impact C-AQ-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-AQ-4b, M-AQ-5c, and M-AQ-7a through M-AQ-7e.
- Impact C-AQ-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions. The impact would be reduced to less than significant with Mitigation Measures M-AQ-5c and M-AQ-9a through M-AQ-9c.

WIND

- Impact WI-1: The Hub Plan could create wind hazards in publicly accessible areas of substantial pedestrian use. The impact would be reduced to less than significant with Mitigation Measures M-WI-1a and M-WI-1b.
- Impact WI-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create wind hazards in publicly accessible areas of substantial pedestrian use. The impact would be reduced to less than significant with Mitigation Measure M-WI-1b.
- Impact C-WI-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably

foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts. The impact would be significant and unavoidable, even with implementation of Mitigation Measures M-WI-1a and M-WI-1b.

SHADOW

- Impact SH-1. The Hub Plan would create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces. The impact would be significant and unavoidable. There are no feasible mitigation measures that would reduce shadow impacts.
- Impact C-SH-1. The Hub Plan, in combination of past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts. The impact would be significant and unavoidable. There are no feasible mitigation measures that would reduce shadow impacts.

B. DESCRIPTION OF ALTERNATIVES SELECTED

This section identifies and describes the following alternatives to the Hub Plan, the two individual development projects, and the Hub HSD:

- Alternative A – Hub Plan and Hub HSD No Project Alternative
- Alternative B – Hub Plan Land Use Plan Only Alternative
- Alternative C – Hub Plan Reduced Intensity Alternative
- Alternative D – 30 Van Ness Avenue No Project Alternative
- Alternative E – 30 Van Ness Avenue Reduced Intensity Alternative
- Alternative F – 98 Franklin Street No Project Alternative
- Alternative G – 98 Franklin Street Reduced Intensity Alternative

These seven alternatives were determined to adequately represent the range of potentially feasible alternatives required under CEQA for this project. These alternatives would lessen or, in some cases, avoid significant and unavoidable adverse impacts related to built-environment resources, transportation, air quality, noise, wind, and shadow. Multiple “no project” alternatives are included as Alternatives A (for the Hub Plan), D (for the 30 Van Ness Avenue Project), and F (for the 98 Franklin Street project), as required by CEQA, even though they would not meet the basic project objectives of those respective components of the proposed project. Alternatives B, C, E, and G are all potentially feasible options that would meet the basic project objectives to varying degrees; these four alternatives are all reduced variations of those project components.

The selected alternatives are described in further detail below. **Table 5-1** compares each alternative to the proposed project and its respective impacts.

Alternative A – Hub Plan and Hub HSD No Project Alternative

CEQA Guidelines section 15126.6(e)(3)(A) indicates that, generally, when a project being analyzed is a revision to an existing land use or regulatory plan (such as the Hub Plan as a revision to the Market and Octavia Plan Area Plan and the planning code and zoning map revisions that would implement the Hub Plan), the No Project Alternative should be considered to be a continuation of the existing plan into the future. CEQA Guidelines section 15126.6(e)(3)(A) states that, "Typically, this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan." Consistent with this guidance, the Hub Plan and Hub HSD No Project Alternative considered in this EIR preserves the existing zoning and height and bulk controls in the Market and Octavia Area Plan and assumes no adoption of the Hub Plan or Hub HSD. No streetscape and street network improvements in the Hub Plan area would occur, and the Hub Plan area would not be designated an HSD.

Alternative A considers individual development projects in general with the assumption that buildout of the 18 sites within the proposed Hub Plan boundaries, as presented in **Table 2-1**, p. 2-24, including the two sites at 30 Van Ness Avenue and 98 Franklin Street, would occur by 2040 and be developed according to current land use controls for zoning, height, and bulk specifications as specified in the Market and Octavia Area Plan. In addition, any individual development projects under Alternative A would be required to comply with the mitigation measures identified in the Market and Octavia Area Plan. Individual development projects under Alternative A are also assumed to meet Better Streets Plan requirements.

Growth projections under Alternative A are based on anticipated future growth for San Francisco, the need for more housing, and the fact that the San Francisco General Plan has identified the Hub Plan area as an ideal location for high-density housing. As discussed in Section E.3, Population and Housing, in the initial study (Appendix B), the San Francisco Planning Department (department) and Association of Bay Area Governments (ABAG) expect San Francisco to gain approximately 101,000 households and 270,000 residents between 2010 and 2040. Employment is forecast to increase by 34 percent during this period, while housing production in the city is estimated to total approximately 20,170 units. Development projections for Alternative A are calculated by growth allowed under existing zoning. The total number of new residential units developed under Alternative A would be approximately 5,300 (compared to the potential for approximately 8,100 new units under the Hub Plan). Although it is probable

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Description	The Hub Plan would implement changes to current zoning controls, including changes to height and bulk districts for select sites, to allow more housing, including more affordable housing. Modifications to land use zoning controls would also allow more flexibility for development of nonresidential uses, specifically office, institutional, art, and public uses. The Hub Plan also calls for public realm improvements to streets and alleys within and adjacent to the Hub Plan area, such as sidewalk widening, streetlight upgrades, median realignment, road and vehicular parking reconfiguration, tree planting, and the addition of bulb-outs. The proposed project at 30 Van Ness Avenue includes retention of portions of the existing 75-foot-tall, five-story building and construction of a 45-story building with ground-floor retail space, 11 floors of office space, and approximately 33 floors of residential space. The proposed project at 98 Franklin Street includes demolition of the existing 100-space surface vehicular parking lot and construction of a 31-story residential tower above a five-story podium that would be occupied by new high school facilities for the International High School (grades 9–12 of FAIS).	Buildout according to current land use controls for zoning, height, and bulk specifications as specified in the Market and Octavia Area Plan.	Assumes the same policies, planning code and general plan amendments as with the Hub Plan and Hub HSD, except that this alternative would exclude implementation of the Hub Plan's proposed streetscape and street network improvements.	Modifies the buildout assumptions at the 18 sites identified for height and bulk increases. Requires that all projects involving historic resources conform to the Secretary of the Interior's Standards for Rehabilitation.	No change to existing conditions.	Partial retention of the existing office/retail building and construction of an approximately 11-story building with ground-floor retail space and 10 floors of office space, reaching a height of approximately 150 feet.	No change to existing conditions.	Construction of a 120-foot (10-story) building that includes 54,505 square feet of residential uses, 81,000 square feet of school uses, 23,753 square feet of parking uses, and 3,100 square feet of retail uses.
Ability to Meet Project Sponsor's Objectives	Meets all of the sponsor's objectives.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would achieve most but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would not meet any of the sponsor's objectives.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would not meet any of the sponsor's objectives.	Would achieve some but not all of the sponsor's objectives but to a lesser extent than the proposed project.
Land Use and Planning								
Physical Division of Community	Impact LU-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not physically divide an established community.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Conflict with Land Use Plans	Impact LU-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Land Use	Impact C-LU-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to cumulative land use impacts.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Aesthetics								
Scenic Vista	Impact AE-1: The Hub Plan would not have a substantial adverse effect on a scenic vista.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Conflict with Zoning and Scenic Quality	Impact AE-2: The Hub Plan would not conflict with applicable zoning and other regulations governing scenic quality or substantially damage scenic resources.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Light and Glare	Impact AE-3: The Hub Plan would not create a new source of substantial light or glare in the Hub Plan area that would adversely affect daytime or nighttime views or substantially affect people or properties.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Aesthetics	Impact C-AE-1: The Hub Plan, along with other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact on aesthetics.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Population and Housing								
Population Growth	Impact PH-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not induce substantial unplanned population growth beyond that projected by regional forecasts, either directly or indirectly.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Housing Demand	Impact PH-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not generate housing demand beyond projected housing forecasts.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Replacement Housing	Impact PH-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing outside of the Hub Plan area.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Population and Housing	Impact C-PH-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and, cumulatively, other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact on population or housing.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cultural Resources								
Historical Resources	Impact CUL-1: The Hub Plan could cause a substantial adverse change in the significance of individual built environment resources and/or historic districts, as defined in section 15064.5, including resources listed in articles 10 or 11 of the San Francisco Planning Code.	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Historical Resources	Impact CUL-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a substantial adverse change to individual built environment resources and/or historic districts, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Historical Resources	Impact CUL-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of an individual built environment resource and/or historic district, as defined in section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code, from ground-borne vibration caused by temporary construction activities.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Archeological Resources	Impact CUL-4. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could cause a substantial adverse change in the significance of an archaeological resource, as defined in section 15064.5.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Human Remain	Impact CUL-5. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could disturb human remains, including those interred outside of formal cemeteries.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Historical Resources	Impact C-CUL-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in demolition and/or alteration of built environment resources.	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Cumulative Historical Resources	Impact C-CUL-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in demolition and/or alteration of built environment resources.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Archeological Resources	Impact C-CUL-3. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, could result in a significant cumulative impact on archaeological resources and human remains.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Tribal Cultural Resources								
Change in Significance	Impact TCR-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could result in a substantial adverse change in the significance of a tribal cultural resource.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Tribal Consultation Resources	Impact C-TCR-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on tribal cultural resources.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Transportation and Circulation								
Circulation Interference	Impact TR-1. The Hub Plan would require an extended duration for the construction period and intense construction activity, the secondary effects of which could create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit.	Less than the proposed Hub Plan. (SU)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Circulation Interference	Impact TR-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not require an extended duration for the construction period or intense construction activity, the secondary effects of which could not create potentially hazardous conditions for people walking, bicycling, or driving; interfere with accessibility for people walking or bicycling; or substantially delay public transit.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
VMT	Impact TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not cause substantial additional VMT or induced automobile travel.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Driving Hazards	Impact TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create major driving hazards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Transit Delay and Hazards	Impact TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially delay local or regional transit or create potentially hazardous conditions for public transit providers.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Hazardous Conditions	Impact TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people walking or otherwise interfere with accessibility for people walking to the project site or adjoining areas.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Hazardous Conditions	Impact TR-7. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in hazardous conditions for people bicycling or otherwise interfere with bicycle accessibility.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Loading	Impact TR-8. The Hub Plan could result in commercial vehicle and passenger loading demand that could not be accommodated off-street or within curbside loading spaces, which could result in potentially hazardous conditions or significant delays for transit, people bicycling, or people walking.	Similar to the proposed Hub Plan. (SU)	Similar to the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Loading	Impact TR-9. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would accommodate commercial vehicle and passenger loading demand.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Parking	Impact TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in a substantial vehicular parking deficit.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Emergency Access	Impact TR-11. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in inadequate emergency access.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Construction	Impact C-TR-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative construction-related transportation impacts.	Less than the proposed Hub Plan. (SU)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (SUM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (SUM)
Cumulative VMT	Impact C-TR-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not cause substantial additional VMT or substantially induce automobile travel.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Traffic Hazards	Impact C-TR-3. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to traffic hazards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Transit Impacts	Impact C-TR-4. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative transit impacts.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Pedestrians	Impact C-TR-5. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts on people walking.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Bicyclists	Impact C-TR-6. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative bicycle impacts.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Loading	Impact C-TR-7. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would contribute considerably to significant cumulative loading impacts.	Similar to the proposed Hub Plan. (SU)	Similar to the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Cumulative Loading	Impact C-TR-8. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not contribute considerably to significant cumulative loading impacts.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Parking	Impact C-TR-9. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative vehicular parking impacts.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Emergency Access	Impact C-TR-10. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in significant cumulative impacts related to emergency access.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Noise								
Construction Noise	Impact NOI-1. During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Construction Noise	Impact NOI-2. Construction of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Construction Vibration	Impact NOI-3. Construction of the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would generate excessive ground-borne vibration or ground-borne noise levels.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTSM)
Operational Noise	Impact NOI-4. During ooperations, the Hub Plan would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Operational Noise	Impact NOI-5. Operations of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTSM)
Cumulative Construction Noise	Impact C-NOI-1. Construction of the Hub Plan and the individual development projects at 30 Van Ness Avenue and 98 Franklin Streets,, in combination with other past, present, and reasonably foreseeable future projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (SUM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (SUM)
Cumulative Construction Vibration	Impact C-NOI-2. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of excessive ground-borne vibration or ground-borne noise levels during construction.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTS)
Cumulative Operational Noise	Impact C-NOI-3. Operation of the Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	NA	NA	NA	NA

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Cumulative Operational Noise	Impact C-NOI-4. Operation of the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (LTS)
Air Quality								
Conflict with Clean Air Plan	Impact AQ-1. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue or 98 Franklin Street, would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Similar to the proposed 30 Van Ness Avenue Project. (LTS)	Similar to the proposed 98 Franklin Street Project. (LTS)	Similar to the proposed 98 Franklin Street Project. (LTS)
Criteria Air Pollutants	Impact AQ-2. The Hub Plan would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-3. The construction and operation of streetscape and street network improvements proposed as part of the Hub Plan would not result in a cumulatively considerable net increase in criteria pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (NI)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-4. During construction, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-5. During operation, the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	Less than the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Criteria Air Pollutants	Impact AQ-6. During construction or operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not result in a cumulatively considerable net increase in criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
$PM_{2.5}$ and TACs	Impact AQ-7. The Hub Plan would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	Less than the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
$PM_{2.5}$ and TACs	Impact AQ-8. Construction and operational activities associated with the streetscape and street network improvements proposed as part of the Hub Plan would not result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (NI)	Less than the proposed Hub Plan. (LTS)	NA	NA	NA	NA

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
$PM_{2.5}$ and TACs	Impact AQ-9. During construction and operation, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Odors	Impact AQ-10. The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue or 98 Franklin Street, would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative $PM_{2.5}$ and TACs	Impact C-AQ-1: The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions.	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	Less than the proposed Hub Plan. (SUM)	NA	NA	NA	NA
Cumulative $PM_{2.5}$ and TACs	Impact C-AQ-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants under 2040 cumulative conditions.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Greenhouse Gas Emissions								
Cumulative GHG	Impact C-GG-1: The Hub Plan would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative GHG	Impact C-GG-2: The Hub Plan's streetscape and street network improvements and the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)	Less than the proposed 98 Franklin Street Project. (LTS)
Wind								
Wind in Outdoor Public Areas	Impact WSI-1: The Hub Plan could create wind hazards in publicly accessible areas with substantial pedestrian use.	Less than the proposed Hub Plan. (LTSM)	Same as the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	NA	NA	NA	NA
Wind in Outdoor Public Areas	Impact WI-2: The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create wind hazards in publicly accessible areas with substantial pedestrian use.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Wind in Outdoor Public Areas	Impact C-WI-1. The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable wind impacts.	Less than the proposed Hub Plan. (SUM)	Same as the proposed Hub Plan. (SUM)	Similar to the proposed Hub Plan. (SUM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Similar to the proposed 30 Van Ness Avenue Project. (SUM)	Less than the proposed 98 Franklin Street Project. (NI)	Similar to the proposed 98 Franklin Street Project. (SUM)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Shadow								
Outdoor Public Areas	Impact SH-1. The Hub Plan would create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	Similar to the proposed Hub Plan. (SU)	Same as the proposed Hub Plan. (SU)	Less than the proposed Hub Plan. (SU)	NA	NA	NA	NA
Outdoor Public Areas	Impact SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street would not create new shadow that would substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Outdoor Public Areas	Impact C-SH-1. The Hub Plan, in combination with past, present, and reasonably foreseeable projects in the vicinity, would result in cumulatively considerable shadow impacts.	Similar to the proposed Hub Plan. (SU)	Same as the proposed Hub Plan. (SU)	Less than the proposed Hub Plan. (SU)	NA	NA	NA	NA
Cumulative Outdoor Public Areas	Impact C-SH-2. The individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable projects in the vicinity, would not result in cumulatively considerable shadow impacts.	NA	NA	NA	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Recreation								
Use of Facilities	Impact RE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would increase the use of existing parks and recreational facilities but would not result in substantial deterioration or physical degradation of such facilities or adverse physical environmental effects from development of new recreational facilities.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Recreation Impacts	Impact C-RE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on recreational resources.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Utilities and Service Systems								
Water Supply	Impact UT-1: Adequate water supplies are available to serve the Hub Plan, the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, and reasonably foreseeable future development in normal, dry, and multiple dry years, unless the Bay-Delta Plan Amendment is implemented; in that event, the SFPUC would develop new or expanded water supply facilities to address shortfalls in single and multiple dry years, which would occur with or without implementation of the Hub Plan. Impacts related to new or expanded water supply facilities cannot be identified at this time, and such facilities cannot be implemented in the near term. The SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects. However, the Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not make a considerable contribution to impacts from increased rationing.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Expansion of Utilities	Impact UT-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not require or result in the relocation, expansion, or construction of new wastewater treatment, stormwater, electric power, natural gas, or telecommunication facilities, or exceed capacity of the wastewater treatment provider when combined with other commitments.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Solid Waste	Impact UT-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure, and comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Utilities	Impact C-UT-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute to cumulative impacts on utilities and services.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Public Services								
Demand for Services	Impact PS-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would increase the demand for police service or fire protection service but not to such an extent that construction of new or expanded facilities would be required.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Schools	Impact PS-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly generate school students and increase enrollment in public schools such that new or physically altered facilities would be required.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Public Services	Impact C-PS-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, combined with past, present, and reasonably foreseeable future projects in the vicinity, would not result in a cumulatively considerable contribution to cumulative impacts on police, fire, and school district services such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required in order to maintain acceptable levels of service.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

Table 5-1. Comparison of the Environmental Impacts of the Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street to Impacts of Alternatives

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Biological Resources								
Sensitive Species	Impact BI-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could have a substantial adverse effect, either directly or through habitat modifications, on 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.	Less than the proposed Hub Plan. (LTSM)	Similar to the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Migration	Impact BI-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, 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.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Conflict with Existing Policies	Impact BI-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Biological Resources	Impact C-BI-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on biological resources.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Geology and Soils								
Surface Fault Rupture	Impact GE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not be subject to the effects of surface fault rupture.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Seismic Ground Shaking	Impact GE-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking.	Less than to the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Ground Failure	Impact GE-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not directly or indirectly cause seismically induced ground failure, including liquefaction, earthquake-induced settlement, or landslides.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Erosion	Impact GE-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in substantial erosion or loss of topsoil.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Geologic Unit/Unstable Soil	Impact GE-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not be located on a geologic unit or soil that is unstable or that could become unstable as a result of the project.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Expansive Soils	Impact GE-6: The Hub Plan, as well as or individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create substantial risks to life or property as a result of location on expansive soils.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Paleontological Resources	Impact GE-7: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, could directly or indirectly destroy a unique paleontological resource or site or geological feature.	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed Hub Plan. (LTSM)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTSM)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTSM)
Cumulative Geology and Soils	Impact C-GE-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, and reasonably foreseeable future projects, would not result in a considerable contribution to cumulative impacts related to geology, soils, seismicity, and paleontological resources.	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Hydrology and Water Quality								
Water Quality Control Plan	Impact HY-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and would not conflict with or obstruct implementation of a water quality control plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Groundwater	Impact HY-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin or conflict with or obstruct implementation of a sustainable groundwater management plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Drainage	Impact HY-3: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation onsite or offsite.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Drainage	Impact HY-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, or substantially increase the rate or amount of surface runoff in manner that would result in flooding onsite or offsite.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Drainage	Impact HY-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street and, would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Flooding	Impact HY-6: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not impede or redirect floodflows.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Hydrology	Impact C-HY-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute considerably to cumulative impacts on hydrology and water quality	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Hazards and Hazardous Materials								
Transit and Disposal	Impact HZ-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Upset and Accidental Conditions	Impact HZ-2: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not create a significant hazard for the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. In addition, development under the Hub Plan, as well as the individual development projects, could occur on the site(s) identified on the list of hazardous materials sites compiled pursuant to Government Code section 65962.5 but compliance with regulations would ensure that impacts remain less than significant.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Building Materials	Impact HZ-3: The Hub Plan, as well as the individual development projects at 30 Van Ness Avenue and (98 Franklin Street, would not expose workers and the public to hazardous building materials, including asbestos-containing materials, lead-based paint, polychlorinated biphenyls, bis(2-ethylhexyl) phthalate, and mercury, during demolition and building removal or result in a release of these materials into the environment during construction.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Schools	Impact HZ-4: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)

TABLE 5-1. COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE HUB PLAN, 30 VAN NESS AVENUE, AND 98 FRANKLIN STREET TO IMPACTS OF ALTERNATIVES

Impacts	Proposed Project: Hub Plan, 30 Van Ness Avenue, and 98 Franklin Street	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Emergency Response	Impact HZ-5: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Hazards	Impact C-HZ-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, and reasonably foreseeable future development, would not make a considerable contribution to any cumulative impact related to hazards and hazardous materials.	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Energy								
Construction and Operation	Impact EN-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation; or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Cumulative Energy	Impact C-EN-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Similar to the proposed Hub Plan. (LTS)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (LTS)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (LTS)
Agriculture and Forestry Resources								
Agriculture and Forestry	Impact AG-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, would not (a) convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; (b) conflict with existing zones for agricultural use or a Williamson Act contract; (c) conflict with existing zoning for, or cause rezoning of, forestland or timberland; (d) result in the loss of forestland or conservation of forestland to non-forest use; or (e) involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or forestland to non-forest use.	Less than the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)
Cumulative Agriculture and Forestry	Impact C-AG-1: The Hub Plan, as well as individual development projects at 30 Van Ness Avenue and 98 Franklin Street, in combination with other past, present, or reasonably foreseeable projects, would not result in impacts on agriculture and forestry resources.	Less than the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Similar to the proposed Hub Plan. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 30 Van Ness Avenue Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)	Less than the proposed 98 Franklin Street Project. (NI)

Legend: NI = No Impact; LTS = Less than significant impact, no mitigation required; S = Significant; SU = Significant and unavoidable impact, no feasible mitigation; SUM = Significant and unavoidable impact after mitigation; NA = Not Applicable

that not all sites would be built out to the Market and Octavia Area Plan height limits, it is also likely that development on some parcels would take advantage of state and local density bonus programs, which would allow construction to heights that would be above current limits. Therefore, on balance, a buildout to existing height limits is reasonable for purposes of estimating development potential under this alternative.

Alternative A assumes that growth in the Hub Plan area and the city would occur with or without implementation of the Hub Plan, but that, absent implementation of the Hub Plan, a smaller percentage of citywide growth would occur within the Hub Plan area.

Alternative B – Hub Plan Land Use Plan Only Alternative

Alternative B assumes that the same policies and planning code and general plan amendments would be implemented as with the Hub Plan and Hub HSD, except that this alternative would exclude implementation of the Hub Plan's proposed streetscape and street network improvements in the Hub Plan vicinity, which are shown in Chapter 2, Project Description, **Figure 2-2**, p. 2-4. This alternative was developed in the event that the proposed streetscape and street network improvements program does not get approved as part of the Hub Plan. This alternative would generally reduce impacts associated with excavation for streetscape and street network improvements, which would reduce transportation, air quality, and noise effects. This alternative assumes the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street would occur, as described throughout this EIR. As such, development assumptions for this alternative would be the same as those for the Hub Plan and Hub HSD, including the addition in the Hub Plan area of approximately 8,100 residential units, which includes the two individual development projects at 30 Van Ness Avenue and 98 Franklin Street. Alternative B includes upzoning of the 18 sites, rezoning parcels from Neighborhood Commercial Transit (NCT) to Downtown General Commercial (C-3-G) zoning district, and extending the Van Ness and Market Downtown Residential Special Use District, as would occur with the proposed project. There would be no change to development intensity as compared to the project.

Alternative C – Hub Plan Reduced Intensity Alternative

Alternative C, the Hub Plan Reduced Intensity Alternative, would reduce the buildout assumptions at the 18 sites identified for height and bulk increases detailed in **Table 2-1**, p. 2-24, with an estimated 7,802 new residential units (compared with approximately 8,100 new residential units under the Hub Plan), including a 15 percent development "buffer" within this number (same as the Hub Plan). In addition, all projects involving historic resources within the Hub Plan area would be required to conform to the Secretary of the Interior's Standards for Rehabilitation. This alternative was developed to reduce identified impacts on built-environment resources and reduce shadow impacts.

To partially address identified impacts on historic resources, under Alternative C, the height increase and rezoning proposed at 99 South Van Ness Avenue, which contains historical or potentially historical resources, would not occur, and this site would be removed from the project entirely and the existing zoning and height and bulk controls in the Market and Octavia Area Plan would be preserved. At 170 Otis Street, upzoning would still occur but would meet the Secretary of the Interior's standards because controls would be included with conditions that would require buildout to be in compliance with the standards. At 10 South Van Ness Avenue, the Full Preservation Alternative identified in the 10 South Van Ness Avenue EIR would be implemented, under which the existing building at 10 South Van Ness Avenue, a historical resource, would undergo some changes but it would retain all of its exterior and interior character-defining features.[2]

In addition to the features of Alternative C described above, upzoning throughout the Hub Plan area would be reduced by 20 feet at the following sites to reduce impacts related to shadow:

- 1 South Van Ness Avenue (from 650 to 630 feet)
- 10 South Van Ness Avenue (from 590 to 570 feet); this reduction in height would be in addition to implementation of the full preservation alternative
- 1500–1540 Market Street (from 450 to 430 feet)
- 30 Van Ness Avenue (from 520 to 500 feet)
- 33 Gough Street (from 250 to 230 feet)

The height reductions at all sites except for 33 Gough Street would reduce shadow impacts on Patricia's Green, while the height reduction at 33 Gough Street would reduce shadow impacts on McCoppin Hub.

Finally, as noted above, all subsequent development projects in the Hub Plan area involving historic resources would be required to conform to the Secretary of the Interior's Standards for Rehabilitation. Given that conformity with the standards generally limits the maximum development potential of an individual site (because the standards require retention of character-defining features), this requirement is likely to further reduce development potential under this alternative, although it is unknown exactly by how much.

Alternative D – 30 Van Ness Avenue No Project Alternative

Under Alternative D, the 30 Van Ness Avenue Project would not be developed as proposed in this EIR. Existing conditions at 30 Van Ness Avenue would not change under Alternative D. The existing 75-foot office and retail building would remain, along with the existing ingress and

[2] San Francisco Planning Department, 10 South Van Ness Avenue Mixed Use Project, October 17, 2018, *http://sfmea.sfplanning.org/2018-10-17_DEIR_10SVN_reduced.pdf*, accessed March 4, 2018.

egress points. As such, the proposed housing units, commercial square footage, parking, and streetscape improvements at 30 Van Ness Avenue would not be implemented. **Table 5-2** provided a comparison of the proposed 30 Van Ness Avenue Project and Alternative D.

TABLE 5-2. 30 VAN NESS AVENUE COMPARISON

<table>
<tr><th>Category</th><th>30 Van Ness Avenue Proposed Project</th><th>Alternative D: 30 Van Ness Avenue No Project Alternative</th><th>Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative</th></tr>
<tr><td>Residential units</td><td>610</td><td>0</td><td>0</td></tr>
<tr><td>Retail</td><td>21,000</td><td>13,840</td><td>15,000</td></tr>
<tr><td>Office</td><td>350,000</td><td>184,100</td><td>350,000</td></tr>
<tr><td>Privately owned public open space</td><td>3,300</td><td>0</td><td>3,300</td></tr>
<tr><td>Commonly accessible open space – residential</td><td>29,280</td><td>0</td><td>0</td></tr>
<tr><td>Podium height</td><td>150 feet</td><td rowspan="2">75 feet</td><td rowspan="2">150 feet</td></tr>
<tr><td>Building height</td><td>520 feet</td></tr>
<tr><td>Stories</td><td>45</td><td>5</td><td>11</td></tr>
<tr><td>Basement levels</td><td>2</td><td>0</td><td>1</td></tr>
<tr><td>Employees</td><td>1,520</td><td>710</td><td>1,503</td></tr>
<tr><td>Parking spaces</td><td>243</td><td>42</td><td>89</td></tr>
<tr><td>Loading Spaces</td><td>6</td><td>0</td><td>5</td></tr>
<tr><td>Bicycle spaces</td><td>310 class 1, 48 class 2</td><td>0</td><td>72 class 1, 15 class 2</td></tr>
</table>

ALTERNATIVE E – 30 VAN NESS AVENUE REDUCED INTENSITY ALTERNATIVE

Alternative E, the 30 Van Ness Avenue Reduced Intensity Alternative, includes partial retention of the existing office/retail building and construction of an approximately 11-story building with ground-floor retail space and 10 floors of office space, reaching a height of approximately 150 feet, with an additional 20 feet to the top of the rooftop mechanical features, as permitted by the planning code. The building would have a trapezoidal shape, similar to the proposed project, with frontages along Market and Fell streets and Van Ness Avenue. In total, the existing structure would be altered and expanded from its current envelope of approximately 184,100 square feet to a total of up to approximately 365,000 square feet, including up to 15,000 square feet of retail and 350,000 square feet of general office space. Under this alternative, office uses in the existing building would be expanded, with ground-floor retail remaining on the first floor and 10 floors of office uses above. Compared to the proposed project at 30 Van Ness Avenue, which includes a minimum of 350 units and up to 610 units in the tower portion of the building, Alternative E does not include residential uses or a tower. This alternative would include one below-grade parking level with 89 parking spaces, two car-share spaces, 87 bicycle parking spaces, five loading spaces, and require 1,503 permanent employees, while the proposed project would include two below-grade parking levels with 243 parking spaces, five car-share spaces, 358 bicycle parking spaces, six loading spaces, and require 1,520 permanent employees. Unlike the proposed project, there would be no change to the existing generator in the building, and no changes to curbside parking and loading are proposed for the alternative.

Alternative E would provide approximately 3,300 square feet of privately owned public open space on the ground floor, same as under the proposed project. Alternative E was developed to provide less vehicle parking and reduce shadow impacts as well as impacts related to the duration of construction activities, specifically, those related to air quality, noise, and transportation.

Unlike the proposed project, under Alternative E, no changes to curbside parking and loading are proposed. Construction is anticipated to last 32 months, from May 2020 to December 2022, as opposed to 44 months under the proposed project. The generator size and quantity would remain the same as under the proposed project: two back-up generators located at a height of 120 feet on the podium. **Table 5-2**, p. 5-25, shows a comparison between the proposed project and Alternative E.

ALTERNATIVE F – 98 FRANKLIN STREET NO PROJECT ALTERNATIVE

Under Alternative F, the 98 Franklin Street Project would not be developed as proposed in this EIR. In the near-term, the project site at 98 Franklin Street, which includes an approximately 100-space surface parking lot, would remain substantially in its existing physical condition, and the proposed new educational, residential, and retail uses would not be developed. In addition, no changes to curbside parking or loading would occur. However, with current land values and housing demand in San Francisco being relatively high, and given the project site's location near downtown, employment centers, and public transit facilities, it is unlikely that this project site would remain in its existing condition for the long term. As described in Chapter 2, Project Description, the project site at 98 Franklin Street is currently zoned C-3 (Downtown Commercial) and has a height limit of 85 feet. It is possible that the project site could be developed pursuant to existing zoning and height controls. **Table 5-3** provides a comparison between the 98 Franklin Street Project and Alternative F.

TABLE 5-3. 98 FRANKLIN STREET COMPARISON

Category	98 Franklin Street Proposed Project	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Land Use	Residential, School, Retail	Parking	Residential, School, Retail
Residential Square Feet	384,100	0	54,505
School Square Feet	81,000	0	81,000
Parking Square Feet	41,800	18,060	23,753
Retail Square Feet	3,100	0	3,100
Number of Buildings	1	0	1
Dwelling Units	345	0	47
School Classrooms	36	0	36
Height	365 feet	0 feet	120 feet
Stories	36	0	10
Depth of Excavation	39 feet	0	29 feet
Parking Spaces	111	Approx. 100	41
Loading Spaces	3	0	3
Permanent Employment	14	Approx. 2	9

ALTERNATIVE G – 98 FRANKLIN STREET REDUCED INTENSITY ALTERNATIVE

Alternative G, the 98 Franklin Street Reduced Intensity Alternative, includes a 162,358-square-foot, 120-foot (10-story) building that includes 54,505 square feet of residential uses, 81,000 square feet of school uses, 23,753 square feet of parking uses, and 3,100 square feet of retail uses.

Under this alternative, FAIS would be located within five levels in the podium (the same as under the proposed project), and 47 residential units would be constructed in a five-story tower, as compared to 345 residential units in a 31-story tower under the proposed project. The residential units would include 10 studios, 24 one-bedroom units, eight two-bedroom units, and five three-bedroom units, as compared to 172 studios, 86 one-bedroom units, 54 two-bedroom units, and 33 three-bedroom units under the proposed project. This alternative would also include 41 below-ground parking spaces, three car share spaces, 191 bicycle parking spaces, three loading spaces, and nine permanent employees, while the proposed project would include 111 below-ground parking spaces, three car share spaces, 539 bicycle parking spaces, three loading spaces, and 14 permanent employees. As with the proposed project, one 1,500-horsepower emergency diesel generator is proposed. Unlike the proposed project, no changes to curbside parking and loading are proposed for the alternative. **Table 5-3**, p. 5-27, shows a comparison between the proposed 98 Franklin Street Project and Alternative G. This alternative was developed to reduce shadow impacts on Patricia's Green and to reduce the amount of excavation required (approximately 10 feet less than the project), which would reduce impacts on archaeological resources as well as air quality and noise.

C. Alternatives Analysis

Cultural Resources

Built-Environment Resources

The Hub Plan and Hub HSD Alternatives

Implementation of the Hub Plan would result in increased development throughout the Hub Plan area, particularly on the 18 sites where a height increase is proposed. Although implementation of the Hub Plan would not immediately change the significance of a historical resource, a foreseeable result of zoning control changes proposed under the Hub Plan could be demolition of built historic resources (i.e., resources individually listed/eligible for listing or historic district contributors) or their alteration in an adverse manner. Even with implementation of Mitigation Measures M-CUL-1a through M-CUL-1f, these measures would not be enough to avoid, rectify, reduce, or compensate for the loss of built-environment resources, and the impact under the Hub Plan would remain significant and unavoidable with mitigation. See Section 3.A, Cultural Resources, Impact CUL-1, for a detailed description of the Hub Plan impacts.

Alternatives A (Hub Plan and Hub HSD No Project Alternative) and C (Hub Plan Reduced Intensity Alternative) would both involve less-intensive development in the Hub Plan area. Alternative A would not increase the allowable building heights and density as the Hub Plan would, and this alternative would likely result in less development pressure for redevelopment of "underutilized" sites because there would be fewer development incentives. Under Alternative A, subsequent development projects would be consistent with existing zoning, height and bulk districts, and the Market and Octavia Area Plan's stated objective of preserving and rehabilitating historic resources. When individual projects are proposed for development, each project would be evaluated for its impact on historical resources per the requirements of CEQA and the planning department's historic review procedures. However, it is possible that, even absent the Hub Plan and Hub HSD, historical resources could be demolished because policies under the Market and Octavia Area Plan encourage but do not require the retention of historical resources. Accordingly, Alternative A would not necessarily avoid the significant and unavoidable impact of the proposed Hub Plan on built-environment resources and historic districts. Cumulative impacts on historical resources would likewise be significant and unavoidable for Alternative A, similar to the proposed the Hub Plan since the contribution of Alternative A would not be substantially reduced when compared to the Hub Plan. During environmental review of subsequent development projects under Alternative A, project-specific mitigation measures comparable to those identified in Section 3.A, Cultural Resources (M-CUL-1a, M-CUL-1b, M-CUL-1c, M-CUL-1d, and M-CUL-1e) could be imposed on subsequent individual developments, as appropriate, to reduce significant impacts on individual built-environment resources and historic district contributors. However, these mitigation measures may not eliminate the significant and unavoidable impacts because it cannot be known whether the mitigation measures would avoid demolition or substantial alteration of a built-environment resource or whether the mitigation measures would reduce potential impacts on individual built-environment resources and historic districts to a less-than-significant level. Thus, the impact of Alternative A on individual built-environment resources and historic districts would be significant and unavoidable with mitigation, similar to the proposed Hub Plan, although somewhat reduced compared to the Hub Plan because of less development pressure. Cumulative impacts would likewise be significant.

Alternative C involves a plan to avoid specific, identified built-environment resources, as detailed under "Description of Alternatives Selected," above. This would result in an overall reduction in impacts on built-environment resources compared to the Hub Plan; impacts on historic resources would be less than significant because subsequent development projects would be required to meet the Secretary of the Interior's Standards for Rehabilitation under this alternative. Cumulative impacts would likewise be less than significant.

Alternative B (Hub Plan Land Use Plan Only Alternative) would involve the same development sites and intensity as the Hub Plan and Hub HSD but would not involve streetscape and street network improvements. The streetscape and street network improvements are not a major contributor to the impacts associated with implementation of the Hub Plan identified in Section 3.A, Cultural Resources. As such, subsequent development under Alternative B, like the Hub Plan, would result in a significant and unavoidable impact on individual built-environment resources and/or historic districts resulting from potential demolition or substantial alteration of those resources, although somewhat reduced compared to the Hub Plan because of the removal of the streetscape and street network improvements. Cumulative impacts would likewise be significant and unavoidable, similar to the Hub Plan, although somewhat reduced compared to the Hub Plan because of the removal of the streetscape and street network improvements. Mitigation Measures M-CUL-1a, M-CUL-1b, M-CUL-1c, M-CUL-1d, and M-CUL-1e would apply to Alternative B with respect to direct effects on individual built-environment resources and historic districts.

Alternatives A and B would not include construction of the streetscape and street network improvements in the Hub Plan area; consequently, they would avoid the less-than-significant impact with mitigation on the San Francisco Auxiliary Water Supply System (AWSS) that would result under the Hub Plan. Thus, Mitigation Measure M-CUL-1f would not be required for these alternatives as it would be under the Hub Plan. Likewise, Alternatives A and B would avoid all construction-related impacts on individual built-environment resources and historic districts associated with the streetscape and street network improvements. Under Alternative C, the impacts resulting from the streetscape and street network improvements would be the same as under the Hub Plan, because Alternative C would not result in any changes to the proposed streetscape and street network changes.

30 Van Ness Avenue Project Alternatives

Implementation of the 30 Van Ness Avenue Project would not result in a substantial adverse change to individual built-environment resources and/or historic districts, and the impact would be less than significant. See Section 3.A, Cultural Resources, Impact CUL-2, for a detailed description of the 30 Van Ness Avenue Project impacts.

Under Alternative D (30 Van Ness Avenue No Project Alternative), the proposed project at 30 Van Ness Avenue would not be constructed, which would avoid the 30 Van Ness Avenue Project's less-than-significant impacts, individually and cumulatively, on built-environment resources, specifically on the former Masonic Temple at 25 Van Ness Avenue, 50 Fell Street, 10 South Van Ness, 135 Van Ness Avenue, the Civic Center Landmark District, and the Market Street Cultural Landscape District.

Compared to the 30 Van Ness Avenue Project, Alternative E (30 Van Ness Avenue Reduced Intensity Alternative) would result in similar, albeit somewhat reduced, less-than-significant impacts on 25 Van Ness Avenue, 50 Fell Street, 10 South Van Ness, 135 Van Ness Avenue, the Civic Center Landmark District, and the Market Street Cultural Landscape District because development would still occur and somewhat alter the setting of nearby built-environment resources. Similar to the 30 Van Ness Avenue Project, no mitigation would be necessary to reduce identified impacts on built-environment resources to a less-than-significant level.

98 Franklin Street Project Alternatives

Implementation of the 98 Franklin Street Project would not result in a substantial adverse change to individual built-environment resources and/or historic districts, and the impact would be less than significant. See Section 3.A, Cultural Resources, Impact CUL-2, for a detailed description of the 98 Franklin Street Project impacts.

Under Alternative F (98 Franklin Street No Project Alternative), the proposed project at 98 Franklin Street would not be constructed, which would avoid the 98 Franklin Street Project's less-than-significant impacts, individually and cumulatively, on built-environment resources, specifically on Miramar Apartments, Young Men's Institute, 41 Franklin Street, 150 Oak Street, the Market Street Masonry Landmark District, and the Hayes Valley Residential Historic District.

Under Alternative G (98 Franklin Street Reduced Intensity Alternative), reduced development at 98 Franklin Street would result in similar, albeit somewhat reduced, less-than-significant impacts on the Miramar Apartments, Young Men's Institute, 41 Franklin Street, 150 Oak Street, the Market Street Masonry Landmark District, and the Hayes Valley Residential Historic District because development would still occur at the site and would still somewhat alter the setting of nearby built-environment resources. Similar to the 98 Franklin Street Project, no mitigation is necessary to reduce identified impacts on built-environment resources to a less-than-significant level.

ARCHAEOLOGICAL RESOURCES AND HUMAN REMAINS

THE HUB PLAN AND HUB HSD ALTERNATIVES

Implementation of the Hub Plan would result in excavations from subsequent development and the streetscape and street network improvements have the potential to physically damage or destroy as-yet undocumented archaeological resources or human remains. However, with implementation of Mitigation Measures M-CUL-4a, M-CUL-4b, and M-CUL-4c, impacts under the Hub Plan would be reduced to less-than-significant levels. See Section 3.A, Cultural Resources, Impact CUL-4 and CUL-5, for a detailed description of the Hub Plan impacts.

Alternatives A (Hub Plan and Hub HSD No Project Alternative) and C (Hub Plan Reduced Intensity Alternative) would result in less-intensive development within the Hub Plan area compared with what is anticipated under the Hub Plan and Hub HSD. However, as with the Hub Plan and Hub HSD, subsequent development projects under Alternatives A and C could still result in excavation that might disturb prehistoric and/or historic-period archaeological resources and human remains; any of these occurrences could result in a significant impact. However, excavation may not be as deep under these alternatives because of less-intensive vertical development; impacts may, therefore, not be as severe as under the Hub Plan. During environmental review of subsequent development projects, under Alternative A, the project-specific mitigation measures identified in the Market and Octavia Area Plan (Mitigation Measures C1 [Archaeological – Soils Disturbing Activities in Archaeologically Documented Properties]; C2 [Archaeological – General Soils Disturbing Activities]; C3 [Archaeological – Soils Disturbing Activities in Public Street and Open Space Improvements]; and C4 [Archaeological – Soils Disturbing Activities in Mission Dolores Archaeological District]), which are comparable to those identified in Section 3.A, Cultural Resources (M-CUL-4a, M-CUL-4b, and M-CUL-4c), would be expected to reduce the impact of subsequent development. Under Alternative C, subsequent development projects would be subject to the mitigation measures identified in Section 3.A, Cultural Resources (M-CUL-4a, M-CUL-4b, M-CUL-4c), and, similar to the proposed project, impacts would be reduced to a less-than-significant level. Both Alternatives A and C, in combination with reasonably foreseeable projects, could result in cumulative impacts on as-yet undocumented resources and human remains through ground disturbance that is likely to encounter archaeologically sensitive sediments. Even with a reduced intensity of development under Alternatives A and C, significant ground disturbance is still likely. Cumulative impacts on as-yet undocumented archaeological resources attributed to Alternatives A and C would be reduced to less than significant with implementation of the mitigation measures identified in Section 3.A, Cultural Resources (M-CUL-4a, M-CUL-4b, M-CUL-4c).

Under Alternative B, the development intensity proposed is the same as under the Hub Plan; therefore, impacts on archaeological resources and human remains under Alternative B would the same as under the Hub Plan, although slightly reduced because of removal of the streetscape and street network improvements.

Alternatives A and B would eliminate construction of the streetscape and street network improvements; consequently, it would avoid the less-than-significant impacts with mitigation on archaeological resources and human remains under the Hub Plan by avoiding excavation associated with streetscape and street network improvements. Alternative C would retain the streetscape and street network improvements, and the impact on archaeological resources and human remains from this project component would be the same as under the Hub Plan, less than significant with mitigation implemented.

30 Van Ness Avenue Project Alternatives

Implementation of the 30 Van Ness Avenue Project would result in excavations that have the potential to physically damage or destroy as-yet undocumented archaeological resources or human remains. However, with implementation of Mitigation Measure M-CUL-4d, impacts under the 30 Van Ness Avenue Project would be reduced to less-than-significant levels. See Section 3.A, Cultural Resources, Impact CUL-4 and CUL-5, for a detailed description of the 30 Van Ness Avenue Project impacts.

Alternative D would eliminate the less-than-significant impacts with mitigation on archaeological resources and human remains that would occur under the 30 Van Ness Avenue Project; because no subsurface soil disturbance would occur, no mitigation would be necessary. Alternative E would still involve ground-disturbing activities and excavation but at a substantially reduced level, most likely resulting in shallower excavation compared to the proposed project (30 feet as opposed to 48 feet under the proposed project). However, approximately the same amount of archaeologically sensitive sediment would be disturbed under Alternative E, meaning that the potential for affecting as-yet undocumented archaeological resources and human remains would be the same as the 30 Van Ness Avenue Project. As a result, implementation of Mitigation Measure M-CUL-4d would still be required under Alternative E to reduce impacts related to excavations under Alternative E. Cumulative impacts under Alternative D would be less than significant because the project would not result in subsurface excavation, which has the potential to damage, destroy, disturb, or remove archaeological resources and human remains. Cumulative impacts under Alternative E would be less than significant with mitigation, as with the proposed project, because this alternative would result in subsurface excavation that, when considered cumulatively with other foreseeable projects where ground disturbance is proposed, could still contribute to an overall cumulative impact on as-yet undocumented resources and human remains. The project's cumulative contribution to this impact under Alternative E would be reduced to less than significant with implementation of the mitigation measure identified in Section 3.A, Cultural Resources (M-CUL-4d), same as under the proposed project.

98 Franklin Street Project Alternatives

Implementation of the 98 Franklin Street Project would result in excavations that have the potential to physically damage or destroy as-yet undocumented archaeological resources or human remains. However, with implementation of Mitigation Measure M-CUL-4d, impacts under the 98 Franklin Street Project would be reduced to less-than-significant levels. See Section 3.A, Cultural Resources, Impact CUL-4 and CUL-5, for a detailed description of the 98 Franklin Street Project impacts.

Alternative F would eliminate the less-than-significant impacts with mitigation on archaeological resources and human remains that would occur under the 98 Franklin Street Project, and because no subsurface soil disturbance would occur, no mitigation is necessary. Alternative G would still involve ground-disturbing activities and excavation, but at a reduced level (29 feet as opposed to 39 feet under the proposed project), resulting in shallower excavation when compared to the proposed project. However, approximately the same amount of archaeologically sensitive sediment would be disturbed under Alternative G, meaning that the potential for affecting as-yet undocumented archaeological resources and human remains would be the same as the 98 Franklin Street Project. As a result, implementation of Mitigation Measure M-CUL-4d would still be required under Alternative G to reduce impacts related to excavations under Alternative G. Cumulative impacts under Alternative G would be less than significant with mitigation, as with the proposed project, because this alternative would result in subsurface excavation that, when considered cumulatively with other foreseeable projects where ground disturbance is proposed, could still contribute to an overall cumulative impact on as-yet undocumented resources and human remains. The project's cumulative contribution to this impact under Alternative G would be reduced to less than significant with implementation of the mitigation measure identified in Section 3.A, Cultural Resources (M-CUL-4d), same as under the proposed project.

TRANSPORTATION AND CIRCULATION

Based on the same methodology used for the proposed Hub Plan, **Table 5-4** presents the person trips by way of travel and vehicle trips for the proposed Hub Plan and three Hub Plan alternatives for the weekday daily and p.m. peak hour conditions, while **Table 5-5**, p. 5-35, presents the person trips by way of travel and vehicle trips for the two individual development projects and their alternatives for the weekday daily and p.m. peak hour conditions.

TABLE 5-4. PROPOSED HUB PLAN AND HUB PLAN ALTERNATIVES TRIP GENERATION BY WAY OF TRAVEL AND TIME PERIOD

Time Period/Proposed Hub Plan and Hub Plan Alternatives	Person Trips by Way of Travel[1]				Vehicle Trips
	Auto	Transit	Non-Motorized[2]	Total	
Daily – Hub Plan					
Proposed Hub Plan	29,593	14,611	46,762	90,966	22,981
Alt A: Hub Plan No Project Alternative	21,190	10,462	33,484	65,136	16,456
Alt B: Hub Plan Land Use Only Alternative	29,593	14,611	46,762	90,966	22,981
Alt C: Hub Plan Reduced Intensity Alternative	28,504	14,073	45,042	87,619	22,136
PM Peak Hour – Hub Plan					
Proposed Hub Plan	6,493	3,937	11,483	21,912	4,909
Alt A: Hub Plan No Project Alternative	4,649	2,819	8,222	15,690	3,515
Alt B: Hub Plan Land Use Only Alternative	6,493	3,937	11,483	21,912	4,909
Alt C: Hub Plan Reduced Intensity Alternative	6,254	3,792	11,061	21,106	4,728

Source: Technical Memorandum – The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR - Estimation of Project Travel Demand, January 2019. See Appendix D.

1. Numbers may not sum to total due to rounding.

2. Non-motorized modes include walk, bicycle, and other non-motorized modes such as scooters and skateboards.

TABLE 5-5. PROPOSED 30 VAN NESS AVENUE AND 98 FRANKLIN STREET PROJECTS AND ALTERNATIVES TRIP GENERATION BY WAY OF TRAVEL AND TIME PERIOD

Time Period/Proposed Project and Project Alternatives	Person Trips by Way of Travel[1]					Vehicle Trips
	Auto	Transit	Bike	Walk	Total	
Daily – 30 Van Ness Avenue Project						
30 Van Ness Avenue Project	2,986	3,418	427	5,448	12,280	2,080
Alt D: 30 Van Ness Avenue No Project Alternative[2]	NA	NA	NA	NA	NA	NA
Alt E: 30 Van Ness Avenue Reduced Intensity Alternative	1,704	2,154	287	3,560	7,704	1,254
98 Franklin Street Project						
98 Franklin Street Project	769	773	82	1,050	2,674	543
Alt F: 98 Franklin Street No Project Alternative[2]	NA	NA	NA	NA	NA	NA
Alt G: 98 Franklin Street Reduced Intensity Alternative	281	380	46	617	1,323	224
PM Peak Hour – 30 Van Ness Avenue Project						
30 Van Ness Avenue Project	266	305	38	487	1,097	182
Alt D: 30 Van Ness Ave No Project Alternative[2]	NA	NA	NA	NA	NA	NA
Alt E: 30 Van Ness Ave Reduced Intensity Alternative	152	193	26	318	689	117
98 Franklin Street Project						
98 Franklin Street Project	75	71	7	95	248	49
Alt F: 98 Franklin Street No Project Alternative[2]	NA	NA	NA	NA	NA	NA
Alt G: 98 Franklin Street Reduced Intensity Alternative	36	30	3	58	128	28

Source: Technical Memorandum – The Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub Housing Sustainability District EIR - Estimation of Project Travel Demand, January 2019. See Appendix D.

1. Numbers may not sum to total due to rounding.

2. NA = not applicable. Under the no project alternatives for the 30 Van Ness Avenue Project and the 98 Franklin Street Project, the existing land uses and associated travel demand on these sites would remain.

Alternative A (Hub Plan and Hub HSD No Project Alternative): Travel Demand Assumptions. As indicated in **Table 5-4**, p. 5-34, the number of total person trips generated by Alternative A would be less than under the Hub Plan. On a daily basis, Alternative A would generate a total of 65,136 person trips by all ways of travel, compared to 90,966 person trips for the Hub Plan (i.e., 28 percent fewer person trips). Similarly, as indicated in **Table 5-4**, p. 5-34, the number of person trips and vehicle trips generated by Alternative A during the p.m. peak hour would also be less than with the Hub Plan. During the p.m. peak hour, Alternative A would generate 15,690 person trips by all ways of travel and 3,515 vehicle trips, compared to 21,912 person trips and 4,909 vehicle trips for the Hub Plan (i.e., 28 percent fewer person trips and vehicle trips).

Alternative B (Hub Plan Land Use Plan Only Alternative): Travel Demand Assumptions. Alternative B includes the same land use development as under the Hub Plan, and therefore travel demand generated by this alternative would be the same as for the Hub Plan. As for the Hub Plan, Alternative B would generate a total of 90,966 person trips by all ways of travel on a daily basis. During the p.m. peak hour, Alternative B would generate 21,912 person trips by all ways of travel and 4,909 vehicle trips.

Alternative C (Hub Plan Reduced Intensity Alternative): Travel Demand Assumptions. Travel demand generated by Alternative C would be slightly less than for the Hub Plan. On a daily basis, Alternative C would generate a total of 87,619 person trips by all ways of travel, compared to 90,966 person trips for the Hub Plan (i.e., 4 percent fewer person trips). During the p.m. peak hour, Alternative C would generate 21,106 person trips by all ways of travel and 4,728 vehicle trips, compared to 21,912 person trips and 4,909 vehicle trips for the Hub Plan (i.e., 4 percent fewer person trips and vehicle trips).

Alternative D (30 Van Ness Avenue No Project Alternative): Travel Demand Assumptions. Under Alternative D, the existing land uses on the 30 Van Ness Avenue project site would remain similar to existing conditions; therefore, this alternative would not generate any additional person or vehicle trips compared to existing conditions.

Alternative E (30 Van Ness Avenue Reduced Intensity Alternative): Travel Demand Assumptions. As indicated in **Table 5-5**, p. 5-35, the number of total person trips generated by Alternative E would be less than under the proposed 30 Van Ness Avenue Project. On a daily basis, Alternative E would generate a total of 7,704 person trips by all modes, compared to 12,280 person trips for the 30 Van Ness Avenue Project (i.e., 37 percent fewer person trips). During the p.m. peak hour, Alternative E would generate 689 person trips by all ways of travel and 117 vehicle trips, compared to 1,097 person trips and 182 vehicle trips for the 30 Van Ness Avenue Project (i.e., 37 percent fewer person trips and 36 percent fewer vehicle trips).

Alternative F (98 Franklin Street No Project Alternative): Travel Demand Assumptions. Under Alternative F, the existing land uses on the 98 Franklin Street project site would remain similar to existing conditions; therefore, this alternative would not generate any additional person or vehicle trips compared to existing conditions.

Alternative G (98 Franklin Street Reduced Intensity Alternative): Travel Demand Assumptions. As indicated in **Table 5-5**, p. 5-35, the number of total person trips generated by Alternative G would be less than under the proposed 98 Franklin Street Project. On a daily basis, Alternative G would generate a total of 1,323 person trips by all ways of travel, compared to 2,674 person trips for the 98 Franklin Street Project (i.e., 49 percent fewer person trips).

During the p.m. peak hour, Alternative G would generate 128 person trips by all ways of travel and 28 vehicle trips, compared to 248 person trips and 49 vehicle trips for the 98 Franklin Street Project (i.e., 48 percent fewer person trips and 43 percent fewer vehicle trips).

The Hub Plan and Hub HSD Alternatives

Construction of overlapping subsequent development projects under the Hub Plan could result in multiple travel lane closures, a high volume of trucks in the vicinity, and sidewalk closures that could disrupt or delay transit, people walking, and people biking, or result in potentially hazardous conditions; therefore, construction-related transportation impacts of the Hub Plan would be significant. As a point of clarification, all other transportation-related impacts would be less than significant. Even with implementation of Mitigation Measure M-TR-1, substantial disruption to transportation could continue to occur, and construction-related transportation impacts of the Hub Plan would remain significant and unavoidable with mitigation. Regarding operation, implementation of the Hub Plan would require projects with more than 100,000 gross square feet of uses to prepare a Driveway and Loading Operations Plan (DLOP) to accommodate project loading demand and to reduce conflicts between project driveway and loading operations and the transportation network. However, for some development projects, it may not be feasible to provide onsite and/or on-street loading facilities to accommodate the demand, which could disrupt circulation for transit, vehicles, people walking, and people biking; create potentially hazardous conditions; and result in a significant and unavoidable loading impact. All other operational impacts of the Hub Plan (i.e., vehicle miles traveled [VMT], driving hazards, local and regional transit operations, people walking and people biking, parking, and emergency access) would be less than significant. See Section 3.B, Transportation and Circulation, Impacts TR-1, TR-3, TR-4, TR-5, TR-6, TR-7, TR-8, TR-10, and TR-11, for a detailed description of the Hub Plan impacts.

Under Alternative B, the same amount of development would occur and at the same locations as under the Hub Plan, but the proposed streetscape and street network changes would not be constructed. As with the Hub Plan, the construction of overlapping subsequent development projects under Alternative B could result in multiple travel lane closures, a high volume of trucks in the vicinity, and sidewalk closures that could disrupt or delay transit, people walking, and people biking or result in potentially hazardous conditions. Therefore, similar to the Hub Plan, construction-related transportation impacts would be significant. Alternatives A and C would also include construction of development projects at locations similar to those proposed under the Hub Plan; however, they would entail less construction than the Hub Plan (about 25 less land use development under Alternative A and about 20 percent less land use development under Alternative C). While the construction duration of individual development projects under Alternatives A and C would be less than the larger development projects that would be possible under the Hub Plan, despite the best efforts of the project sponsors and project construction contractors, it is possible that simultaneous construction of the development projects could result in significant construction-related transportation impacts. Therefore, construction-related transportation impacts would be significant and unavoidable for Alternative A and significant and unavoidable with mitigation for Alternatives B and C, similar to the Hub Plan.

Similar to the Hub Plan, Alternatives A, B, and C could include development projects where it might not be feasible to provide onsite and/or on-street curb loading spaces to accommodate the new loading demand and, similar to the Hub Plan, these development projects could disrupt circulation and create potentially hazardous conditions. Therefore, loading impacts under Alternative A would be significant and unavoidable; loading impacts under Alternatives B and C would be significant and unavoidable, even with implementation of M-TR-1, similar to the Hub Plan.

With respect to cumulative conditions, construction activities associated with development projects in the study area under Alternatives A, B, and C could overlap with simultaneous construction of other nearby projects; however, because Alternatives A and C include less development than the Hub Plan, the potential for overlap would be less under these alternatives compared with the Hub Plan. Therefore, similar to the Hub Plan, these alternatives would contribute considerably to significant cumulative construction-related transportation impacts. Cumulative construction-related transportation impacts would be significant and unavoidable under Alternative A and, as with the Hub Plan, significant and unavoidable with mitigation for Alternatives B and C.

With respect to cumulative loading conditions, it may not be feasible for development projects under Alternatives A, B, and C to provide onsite, on-street loading facilities to accommodate demand; therefore, these alternatives could contribute considerably to significant cumulative loading impacts. The contribution to significant cumulative loading impacts would be less for Alternatives A and C, which involve less development than the Hub Plan. The cumulative loading impacts would be significant and unavoidable for Alternative A and significant and unavoidable, even with implementation of a DLOP, under Alternatives B and C, similar to the Hub Plan.

30 Van Ness Avenue Project Alternatives

Construction and operational impacts of the 30 Van Ness Avenue Project (i.e., VMT, driving hazards, local and regional transit operations, people walking and people biking, commercial and passenger loading, parking, and emergency access) would be less than significant. See Section 3.B, Transportation and Circulation, Impacts TR-2, TR-3, TR-4, TR-5, TR-6, TR-7, TR-9, TR-10, and TR-11, for a detailed description of the 30 Van Ness Avenue Project impacts.

Under Alternative D, the existing conditions on the project site would not change, and therefore Alternative D would not have any construction or operational impacts related to transportation and circulation.

Alternative E would have similar transportation elements as the 30 Van Ness Avenue Project (e.g., on-street and off-street loading, driveways), but would not include any residential uses and would include fewer retail square feet than the 30 Van Ness Avenue Project. Because this alternative would be smaller than the 30 Van Ness Avenue Project, it would generate fewer person and vehicle trips on a daily basis and during the peak hour (see **Table 5-5**, p. 5-35). Similar to the 30 Van Ness Avenue Project, Alternative E construction and operational impacts would be less than significant.

Considering cumulative conditions, Alternative D would maintain the existing uses on the project site and, therefore, unlike the 30 Van Ness Avenue Project, would not contribute considerably to significant cumulative construction-related transportation impacts. Alternative E would have a shorter construction duration than the 30 Van Ness Avenue Project (44 months for the 30 Van Ness Avenue Project compared to 32 months for Alternative E). However, construction activities under this alternative could overlap with simultaneous construction of other nearby projects, which could, in turn, result in significant disruptions for transit, people walking, and people biking. Therefore, similar to the 30 Van Ness Avenue Project, Alternative E would contribute considerably to significant cumulative construction-related transportation impacts; however, given the shorter construction duration for Alternative E, this contribution would be slightly smaller than it would be under the proposed 30 Van Ness Avenue Project. Thus, the cumulative construction-related transportation impacts for Alternative E would be significant and unavoidable with mitigation. Similar to the 30 Van Ness Avenue Project, Alternative E would accommodate its loading demand within onsite, on-street loading spaces and, therefore, would not contribute considerably to significant cumulative loading impacts. As such, the cumulative loading impacts under Alternative E would be less than significant.

98 Franklin Street Project Alternatives

Construction and operational impacts of the 98 Franklin Street Project (i.e., VMT, driving hazards, local and regional transit operations, people walking and people biking, commercial and passenger loading, parking, and emergency access) would be less than significant. See Section 3.B, Transportation and Circulation, Impacts TR-2, TR-3, TR-4, TR-5, TR-6, TR-7, TR-9, TR-10, and TR-11, for a detailed description of the 98 Franklin Street Project impacts.

Under Alternative F, the existing conditions on the project site would not change; therefore, Alternative F would not have any construction or operational impacts related to transportation and circulation.

Alternative G would have similar transportation elements as the 98 Franklin Street Project (e.g., on-street and off-street loading, driveways), but would not include any residential uses and would include fewer retail square feet than the 98 Franklin Street Project. Because this alternative would be smaller than the 98 Franklin Street Project, it would generate fewer person and vehicle trips on a daily basis and during the p.m. peak hour (see **Table 5-5**, p. 5-35). Similar to the 98 Franklin Street Project, Alternative G's construction and operational impacts would be less than significant.

Considering cumulative conditions, Alternative F would maintain the existing uses on the project site and, therefore, unlike the 98 Franklin Street Project, would not contribute considerably to significant cumulative construction-related transportation impacts. Alternative G would have a shorter construction duration than the 98 Franklin Street Project (27 months for the 98 Franklin Street Project compared to 21 to 22 months for Alternative G). However, construction activities under this alternative could overlap with simultaneous construction of other nearby projects that could result in significant disruptions for transit, people walking, and people biking. Therefore, similar to the 98 Franklin Street Project, Alternative G would contribute considerably to significant cumulative construction-related transportation impacts, although, because of the shorter construction duration for Alternative G, this contribution would be slightly smaller than it would be under the 98 Franklin Street Project. The cumulative construction-related transportation impacts under Alternative G would be significant and unavoidable with mitigation. Similar to the 98 Franklin Street Project, Alternative G would accommodate its loading demand within onsite, on-street loading spaces and, therefore, would not contribute considerably to significant cumulative loading impacts. As such, cumulative loading impacts under Alternative G would be less than significant.

Noise and Vibration

The Hub Plan and Hub HSD Alternatives

During construction, the Hub Plan would generate a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards. Although Mitigation Measures M-NOI-1a and M-NOI-1b would reduce the amount of construction noise generated by subsequent development projects in the Hub Plan area to the extent feasible, construction noise from these projects would still be significant and unavoidable. In addition, construction of subsequent development projects under the Hub Plan could involve the use of vibration-generating construction equipment, which could result in damage to structures or sleep disturbance. Mitigation Measures M-NOI-3a and M-NOI-3b would be required to ensure that cosmetic or structural damage caused by construction-related vibration would be avoided or identified through a monitoring program and repaired as necessary to return any damaged structure to its pre-construction condition. Therefore, following the application of M-NOI-3a and M-NOI-3b, the impact of subsequent development under the Hub Plan would be reduced to a less-than-significant level. Operations under the Hub Plan would also result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area in excess of standards because of the potential for new development projects to introduce new noise-generating sources (e.g. HVAC equipment, emergency generators, loading docks, etc.). Implementation of Mitigation Measure M-NOI-4, along with compliance with the building code, would reduce noise impacts from new noise-generating sources in the Hub Plan area, and the impact would be less than significant. See Section 3.C, Noise and Vibration, Impacts NOI-1, NOI-3, and NOI-4, for a detailed description of the Hub Plan impacts.

Build-out in the Hub Plan area under Alternative A (Hub Plan and Hub HSD No Project Alternative) would be expected to result in less traffic in the Hub Plan area, as shown in **Table 5-4**, p. 5-34, and therefore, in less traffic-generated vehicular noise, compared to that under the Hub Plan. Vehicular traffic-generated noise would be similar under Alternatives B (Hub Plan Land Use Plan Only Alternative) and C (Hub Plan Reduced Intensity Alternative) to that under the Hub Plan because the level of development and the related vehicular traffic increase in the Hub Plan area would be similar, as demonstrated in **Table 5-4**, p. 5-34. As discussed in Section 3.C, Noise and Vibration, project-generated vehicular traffic would not result in significant increases in traffic noise along any modeled roadway segment with the Hub Plan. Because traffic volumes under Alternative A would be lower and traffic volumes under Alternatives B and C would be comparable, vehicular traffic noise impacts under these alternatives would be less than significant, same as the Hub Plan, although reduced under Alternative A.

As was the case with the Hub Plan, Plan contributions to cumulative vehicular traffic noise impacts under Alternatives B and C, which would result in similar traffic as the Hub Plan, would not be cumulatively considerable and cumulative impacts are less than significant. Under Alternative A, development in the Hub Plan area would generally be less because there would be less development pressure for redevelopment of "underutilized" sites. Therefore, under Alternative A, contributions to cumulative vehicular traffic noise impacts would most likely be less than under the Hub Plan and Alternatives B and C and would not be cumulatively considerable. Cumulative impacts would be less than significant under Alternatives A, B, and C, similar to the Hub Plan.

With regard to construction noise impacts under Alternatives A, B, and C, construction activities and associated noise would most likely be less under Alternative A compared to the Hub Plan because development would not be incentivized to the same extent as proposed under the Hub Plan. Alternative B would have construction-related noise impacts essentially comparable to, although slightly less than, those of the Hub Plan because the level of build-out development would be similar, except that the less-than-significant construction noise impacts from streetscape and street network improvements would not occur. Similarly, although Alternative C would reduce the intensity of development throughout the Hub Plan area but would not rezone 99 South Van Ness Avenue (this site would be removed entirely under this alternative), the typical equipment required (and, consequently, the typical noise levels generated) in the Hub Plan area and at each site, except the 99 South Van Ness Avenue site, would also be similar. With regard to Alternative A, because the Hub Plan would not be implemented, development in the area would proceed under the Market and Octavia Area Plan. Because the Market and Octavia Area Plan determined that there would be no significant noise impacts at the program or project level, impacts from Alternative A would be less than what would occur under the Hub Plan (and less than Alternatives B and C).

As with the Hub Plan, construction noise impacts for Alternatives B and C would be addressed with implementation of the Hub Plan mitigation measures that pertain to construction noise. Under these two alternatives, construction noise Mitigation Measures M-NOI-1a and M-NOI-1b would be applied to subsequent development projects to reduce construction noise effects. These measures would reduce some construction noise impacts to less-than-significant levels; however, as with the Hub Plan, precise details about the future individual developments under these alternatives are not known at this time (such as the exact construction schedule or construction equipment required). For this reason, it is not possible to ensure that these mitigation measures would reduce construction noise impacts for all future development under these alternatives to less-than-significant levels. As was the case for the Hub Plan, even though the less-than-significant construction noise impacts from streetscape and street network improvements would not occur, construction noise impacts under Alternatives B and C would be significant and unavoidable, although slightly reduced compared to the Hub Plan.

Under Alternative A, development in the Hub Plan area would occur pursuant to the Market and Octavia Area Plan. In the EIR for that project, all noise impacts, including cumulative construction noise impacts, were determined to be less than significant. Therefore, under Alternative A, cumulative construction noise impacts would be less than significant and less than under the Hub Plan. Under Alternatives B and C, as with the Hub Plan, cumulative construction-related noise impacts would be significant and unavoidable with mitigation because these alternatives would still result in a considerable contribution to overall impacts, given the scale of anticipated development, although slightly reduced compared to the Hub Plan.

Because Alternative B would not include the streetscape and street network improvements, as proposed under the Hub Plan, the less-than-significant construction noise impacts associated with streetscapes and street network improvements under the Hub Plan would be eliminated. Alternative C would include the same streetscape and street network improvements as proposed under the Hub Plan. As with the Hub Plan, the construction duration for individual streetscape and street network improvements is expected to be short term (between four and 10 weeks per block for each improvement project) and linear, with construction equipment moving along the street during construction (e.g., not adjacent to the same noise-sensitive receptor for the entire duration of the improvement). For these reasons, any noise increases from construction activities associated with streetscape and street network improvements under Alternative C would be less than significant, as was the case for the Hub Plan.

Construction vibration effects under Alternative A would be less than significant, consistent with the conclusions reached in the Market and Octavia Area Plan EIR. Construction vibration effects under Alternatives B and C would be slightly less than those identified for the Hub Plan because development of future projects under these alternatives would be less than the level of development under the Hub Plan, given the lack of streetscape and street network improvement construction under Alternative B and the removal of one the 18 subsequent development projects under Alternative C. As with the Hub Plan, construction that could occur during nighttime hours (when people normally sleep) would most likely involve the use of smaller equipment, which typically results in relatively low vibration levels. For example, a small bulldozer, even at a distance of 5 feet from a given receptor, would generate a vibration level (0.034 peak particle velocity [PPV] in inches per second [in/sec]) below the distinctly perceptible criteria (0.1 PPV in/sec). Because equipment likely to be used during nighttime hours would be similar to that expected to be used under the Hub Plan, construction for these alternatives would also not result in a strongly perceptible vibration level during nighttime hours at sensitive receptor locations. Vibration annoyance impacts under Alternatives A, B, and C would be less than significant.

With regard to potential vibration-related damage impacts, construction vibration effects related to damage under Alternative A would be less than significant, consistent with the conclusions reached in the Market and Octavia Area Plan EIR. Construction vibration effects related to damage under Alternatives B and C would be comparable to those identified for the Hub Plan because the types of construction that would occur would be comparable, as would the distances between construction activities and nearby sensitive receptors. Mitigation Measures M-NOI-3a and M-NOI-3b would be applied to future development under Alternatives B and C to reduce potential vibration-related damage impacts from construction activities. Application of these mitigation measures would ensure that cosmetic and/or structural damage caused by construction-related vibration would be identified through a monitoring program and repaired as necessary to return any damaged historical architectural resource to its pre-construction condition. Therefore, as with the Hub Plan, damage-related vibration impacts under Alternatives B and C would be reduced to a less-than-significant level.

Cumulative vibration impacts under Alternatives A, B, and C related to annoyance and damage would be less than significant, as was the case with the Hub Plan (and the Market and Octavia Area Plan under Alterative A). Peak vibration levels do not combine in the way noise does; similar to the Hub Plan, multiple pieces of vibration-generating equipment operating simultaneously would not result in a higher peak velocity level. For this reason, a cumulative impact would not result.

Development of future individual projects under Alternative A could also result in the siting of noise-generating uses, such as heating, ventilating, and air-conditioning (HVAC) equipment, emergency generators, outdoor use areas that may use amplified music, loading docks, and any other mechanical equipment (such as fire pumps). Future development projects would need to demonstrate compliance with the noise ordinance; therefore, these types of operational noise sources would be expected to comply with applicable noise criteria, which would be demonstrated during the project-specific environmental analysis. Implementation of project-specific mitigation measures, as needed (noting that no mitigation measures were determined necessary under the Market and Octavia Area Plan for Alternative A), along with compliance with the building code, would reduce noise impacts from new noise-generating sources for future development under Alternative A to less-than-significant levels. With regard to the siting of noise-generating uses under Alternatives B and C, they would result in the development of similar projects in the Hub Plan area and would therefore result in the siting of similar noise-generating uses. Therefore, noise impacts related to the siting of noise-generating uses under Alternative B and C would be comparable and would be potentially significant, similar to the Hub Plan. Mitigation Measure M-NOI-4 would apply to Alternatives B and C and would reduce potential noise impacts to less-than-significant levels, as was the case with the Hub Plan.

30 Van Ness Avenue Project Alternatives

During construction, the 30 Van Ness Avenue Project could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards. However, with implementation of Mitigation Measure M-NOI-1a, noise levels from project construction at 30 Van Ness Avenue, as well as the intensity of potential noise effects, would be reduced to the extent practicable, and the impact would be less than significant with mitigation. In addition, construction of the 30 Van Ness Avenue Project could involve the use of vibration-generating construction equipment, which could result in damage to structures or sleep disturbance. Mitigation Measures M-NOI-3a and M-NOI-3b would be required to ensure that cosmetic or structural damage caused by construction-related vibration would be avoided or identified through a monitoring program and repaired as necessary to return any damaged structure to its pre-construction condition. Therefore, following the application of M-NOI-3a and M-NOI-3b, the impact of the 30 Van Ness Avenue Project would be reduced to a less-than-significant level. Operations under the 30 Van Ness Avenue Project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area, in excess of standards, because noise impacts from emergency generators and HVAC equipment would be less than significant. See Section 3.C, Noise and Vibration, Impacts NOI-2, NOI-3, and NOI-5, for a detailed description of the 30 Van Ness Avenue Project impacts.

Under Alternative D (30 Van Ness Avenue No Project Alternative), the existing conditions on the project site would not change; therefore, Alternative D would not have any construction or operational impacts related to noise, resulting fewer less impacts compared to the proposed project.

Under Alternative E (30 Van Ness Avenue Reduced Intensity Alternative), construction activities would be similar to those that would occur under the 30 Van Ness Avenue Project. Although the level of development would be less, Alternative E would have construction-related noise and vibration impacts, essentially comparable to those of the 30 Van Ness Avenue Project. This is because the types of equipment required (and, consequently, the typical noise and vibration levels generated) at the site would be similar. Even though the overall duration of construction may be shorter, the worst-case noise and vibration levels expected to occur during the construction window would be essentially the same. Because the duration would be shorter, the length of time where impacts would occur would be less compared to the proposed project. However, as with the 30 Van Ness Avenue Project, construction noise and vibration impacts under Alternative E would be significant because of the worst-case noise and vibration levels being relatively comparable, though somewhat reduced compared to the proposed project. However, these impacts would be reduced to less-than-significant levels with implementation of mitigation measures.

Mitigation Measure M-NOI-1a would reduce noise effects of construction for Alternative E to the extent practicable, resulting in a less-than-significant impact with mitigation, similar to the 30 Van Ness Avenue Project. Because of the similar construction assumptions, vibration annoyance and damage-related impacts under Alternative E would be comparable to those described for the 30 Van Ness Avenue Project and less than significant with application of Mitigation Measures M-NOI-3a and M-NOI-3b.

Alternative E would have similar transportation elements as the 30 Van Ness Avenue Project (e.g., on-street and off-street loading, driveways), but would not include any residential uses and would include fewer retail square feet than the 30 Van Ness Avenue Project. Because this alternative would be smaller than the 30 Van Ness Avenue Project, it would generate fewer person and vehicle trips on a daily basis and during the peak hours, potentially resulting in less project-related transportation noise than the 30 Van Ness Avenue Project. Similar to the 30 Van Ness Avenue Project, Alternative E's traffic noise impacts would be less than significant, although somewhat reduced compared to the 30 Van Ness Avenue Project.

With regard to the siting of noise-generating uses, Alternative E would involve the siting of similar operational noise-generating uses (e.g., HVAC equipment and emergency generators). Therefore, noise impacts related to the siting of noise-generating uses under Alternative E would be comparable to those analyzed for the 30 Van Ness Avenue Project and be less than significant for both emergency generators and HVAC equipment. As with the 30 Van Ness Avenue Project, impacts related to the siting of noise-generating uses under Alternative E would be less than significant.

98 Franklin Street Project Alternatives

During construction, the 98 Franklin Street Project could generate a substantial temporary or permanent increase in ambient noise levels in excess of standards. However, with implementation of Mitigation Measure M-NOI-1a, noise levels from project construction at the 98 Franklin Street Project, as well as the intensity of potential noise effects, would be reduced to the extent practicable, and the impact would be less than significant with mitigation. In addition, construction of the 98 Franklin Street Project could involve the use of vibration-generating construction equipment, which could result in damage to structures or sleep disturbance. Mitigation Measures M-NOI-3a and M-NOI-3b would be required to ensure that cosmetic or structural damage caused by construction-related vibration would be avoided or identified through a monitoring program and repaired as necessary to return any damaged structure to its pre-construction condition. Therefore, following the application of M-NOI-3a and M-NOI-3b, the impact of the 98 Franklin Street Project would be reduced to a less-than-significant level. Operations under the 98 Franklin Street Project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the Hub Plan area, in excess of standards, because noise from emergency generators and HVAC equipment would not conflict with the applicable standards. Noise impacts from these types of equipment would be less than significant. See Section 3.C, Noise and Vibration, Impacts NOI-2, NOI-3, and NOI-5, for a detailed description of the 98 Franklin Street Project impacts.

Under Alternative F (98 Franklin Street No Project Alternative), the existing conditions on the project site would not change; therefore, Alternative F would not have any construction or operational impacts related to noise, resulting in fewer impacts compared to the 98 Franklin Street Project.

Under Alternative G (98 Franklin Street Reduced Intensity Alternative), construction activities would be similar to those that would occur under the 98 Franklin Street Project. Although the level of development would be less, Alternative G would have construction-related noise and vibration impacts essentially comparable to those of the 98 Franklin Street Project. This is because the types of equipment required (and, consequently, the typical noise and vibration levels generated) at the site, as well as the distance between the site and nearby sensitive receptors, would be similar. Even though the overall duration of construction may be shorter, the worst-case noise and vibration levels expected to occur during the construction window would be essentially the same. Because the duration would be shorter, the length of time that the impacts would occur would be shorter. However, as with the 98 Franklin Street Project, construction noise and vibration impacts under Alternative G would be significant because of the worst-case noise and vibration levels being relatively comparable, though somewhat reduced compared to the 98 Franklin Street Project. However, these impacts would be reduced to less-than-significant levels with implementation of mitigation measures.

Mitigation Measure M-NOI-1a would reduce noise effects of construction for Alternative G to the extent practicable and would reduce construction noise impacts for Alternative G to a less-than-significant level, similar to the 98 Franklin Street project. Vibration annoyance and damage impacts under Alternative G would be comparable to those described for the 98 Franklin Street Project and less than significant with the application of Mitigation Measures M-NOI-3a and M-NOI-3b.

Alternative G would have similar transportation elements as the 98 Franklin Street Project (e.g., on-street and off-street loading, driveways), but would result in the development of less residential space. In addition, the amount of parking would also decrease. Because this alternative would be smaller than the 98 Franklin Street Project, it would generate fewer person and vehicle trips on a daily basis and during the peak hours, resulting in less project-related transportation noise than the 98 Franklin Street Project. Similar to the 98 Franklin Street Project, traffic noise impacts associated with Alternative G would be less than significant, although somewhat reduced compared to the 98 Franklin Street Project.

With regard to the siting of noise-generating uses, Alternative G would involve the siting of similar operational noise-generating uses (e.g., HVAC equipment and emergency generators). Therefore, noise impacts related to the siting of noise-generating uses under Alternative G would be comparable to those of the 98 Franklin Street Project and less than significant for both emergency generators and HVAC equipment. As with the 98 Franklin Street Project, impacts related to the siting of noise-generating uses would be less than significant.

AIR QUALITY

THE HUB PLAN AND HUB HSD ALTERNATIVES

The Hub Plan would not conflict with or obstruct implementation of the 2017 Clean Air Plan and would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status. The construction of subsequent development projects under the Hub Plan could result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status. Implementation of Mitigation Measures M-AQ-4a and M-AQ-4b would ensure that construction-related emissions would be less than significant. The operation of subsequent development projects under the Hub Plan could also result in a cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status. Mitigation Measures M-AQ-5a, M-AQ-5b, and M-AQ-5c would reduce impacts, but it is not possible to estimate the emissions or the effectiveness or feasibility of the mitigation measures, with the exception of M-AQ-5c, which did evaluate emission reductions; therefore, the impact remains significant and unavoidable. The Hub Plan and subsequent development projects would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. Mitigation Measures M-AQ-5c, M-AQ-7a, M-AQ-7b, M-AQ-7c, M-AQ-7d, and M-AQ-7e would be implemented to reduce impacts, but impacts would remain significant and unavoidable. See Section 3.D, Air Quality, Impacts AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-7, AQ-8, and AQ-10, for a detailed description of the Hub Plan impacts.

Alternative A (Hub Plan and Hub HSD No Project Alternative) is not expected to result in substantial new source of air pollution impacts compared to the Hub Plan. Due to a reduction in net trip generation rates (refer to **Table 5-4**, p. 5-34), the total criteria air pollutant (CAP) and toxic air contaminant (TAC) emissions would be lower than the levels presented in Section 3.D, Air Quality, for the Hub Plan. However, similar to the Hub Plan, Alternative A is expected to result in a significant impact related to air quality when background impacts are added to plan-level impacts, although somewhat reduced. As with the Hub Plan, annual average particulate matter 2.5 microns or fewer in diameter ($PM_{2.5}$) concentrations would be attributed largely to existing background levels, and excess cancer risk values would be above the Bay Area Air Quality Management District's (BAAQMD's) significance thresholds. Mitigation Measures E1 (Air Quality – Particulate Emissions During Construction) and E2 (Air Quality – Short Term Exhaust Emissions) from the Market and Octavia Area Plan EIR would be required under Alternative A and applicable during construction. Therefore, like the Hub Plan, the maximally exposed sensitive receptor locations are expected to exceed the Air Pollution Exposure Zone criteria for annual average $PM_{2.5}$ concentrations and excess cancer risk, so impacts are expected to remain significant and unavoidable with mitigation, although somewhat reduced compared to the Hub Plan.

Alternative B (Hub Plan Land Use Only Plan Alternative) assumes the same level of development as proposed under the Hub Plan. However, Alternative B excludes implementation of the Hub Plan's proposed streetscape and street network improvements. Assuming similar mitigation measures as the Hub Plan, under Alternative B there would be no change to operational air pollution impacts as compared to the Hub Plan, because Alternative B includes the same land use development pattern as the Hub Plan. Similar to the Hub Plan, Alternative B would also include nine diesel emergency generators located on individual project sites, and there are no changes to the net trips generated, as shown in **Table 5-4**, p. 5-34. To the extent that construction of streetscape and street network improvements would increase emissions of CAPs and TACs, Alternative B would have lower emissions compared to the Hub Plan. Thus, CAP and TAC emissions associated with emission sources and the risk contribution from these sources would be similar to or lower than the risks under the Hub Plan. Because of the large contributions from background sources, the maximally exposed individual sensitive receptor is expected to exceed the Air Pollution Exposure Zone criteria for annual average $PM_{2.5}$ concentrations and excess cancer risk, so impacts are expected to remain significant and unavoidable with mitigation.

Alternative C (Hub Plan Reduced Intensity Alternative) would modify assumptions related to the building height and bulk increases for the 18 sites within the Hub Plan. Moreover, this alternative would limit the development potential of other future projects throughout the Hub Plan area because of the requirement that calls for all projects involving historic resources within the Hub Plan area to conform to the Secretary of the Interior's Standards for Rehabilitation. This alternative assumes a reduction in zoning height (by approximately 20 feet) for some of the individual development sites analyzed. Accordingly, the air quality analysis for this alternative assumes that individual development sites include a generator only for the sites that would be rezoned to more than 75 feet. However, the total number of generators considered under this Alternative C is fewer than the Hub Plan. This would result in lower CAP and TAC emissions compared to the levels analyzed for the Hub Plan. Alternative C also results in a small reduction in the net trip generation rate (approximately 4 percent, as shown in **Table 5-4**, p. 5-34), thus resulting in lower emissions. Therefore, CAP and TAC emissions for Alternative C would be lower than the levels analyzed for the proposed Hub Plan. This is expected to result in reduced cancer risk and $PM_{2.5}$ concentrations for Alternative C. However, the overall impacts would continue to be significant with respect to air quality even though no new sources of emissions are created compared to the Hub Plan. Due to the large contributions from background sources, the maximally exposed individual sensitive receptor is expected to exceed the Air Pollution Exposure Zone criteria for annual average $PM_{2.5}$ concentrations and excess cancer risk, so impacts are expected to remain significant and unavoidable with mitigation, although somewhat reduced as compared to the Hub Plan.

Cumulative impacts related to $PM_{2.5}$ concentrations and toxic air contaminants under Alternatives A, B, and C would be similar to the Hub Plan. $PM_{2.5}$ concentrations would be attributed largely to existing background levels, and excess cancer risk values would be above BAAQMD's significance thresholds. Mitigation Measures M-AQ-4a, M-AQ-4b, M-AQ-5a, M-AQ-5b, M-AQ-5c, and M-AQ-7a through M-AQ-7e would still be required under Alternatives A, B, and C. Even with implementation of these mitigation measures, cumulative impacts would result in significant cumulative impacts to existing sensitive receptors and this impact would be significant and unavoidable with mitigation, although somewhat reduced compared to the Hub Plan because of less overall development.

30 Van Ness Avenue Project Alternatives

The 30 Van Ness Avenue Project would not conflict with or obstruct implementation of the 2017 Clean Air Plan and would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status. It would also result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. Mitigation Measures M-AQ-9a and M-AQ-9b would reduce impacts to less than significant. See Section 3.D, Air Quality, Impacts AQ-1, AQ-6, AQ-9, and AQ-10, for a detailed description of the 30 Van Ness Avenue Project's impacts.

Under Alternative D (30 Van Ness Avenue No Project Alternative), the proposed building at 30 Van Ness Avenue would not be developed and the existing conditions at the project site would remain unchanged. Alternative D would not include demolition or construction activities on the project site, and, consequently, no new sources of air pollutants would be introduced. Existing stationary sources of air pollution on or near the project site and major roadways contributing to air pollution in the project vicinity would remain as they are under existing conditions. Thus, Alternative D would not contribute to any potential impact related to air quality, resulting in no impact, which is less than the impact of the proposed project.

Alternative E (30 Van Ness Avenue Reduced Intensity Alternative) would result in less construction compared to the proposed 30 Van Ness Avenue Project. Construction of the project under Alternative E is expected to last approximately 32 months, compared to the approximately 43-month construction duration analyzed for the proposed 30 Van Ness Avenue Project. The expansion of the existing office and retail use would be substantially offset by the large decrease in residential space on the project site compared to the proposed 30 Van Ness Avenue Project. The change in land use for Alternative E would also result in a reduction in net trip generation rate, as shown in **Table 5-5**, p. 5-35, resulting in lower CAP and TAC emissions due to project traffic compared to the proposed project. Under Alternative E, the emergency diesel generators would remain unchanged from the proposed 30 Van Ness Avenue Project; thus, CAP and TAC emissions associated with the diesel emergency generators would be the same as the 30 Van Ness Avenue Project.

CONSTRUCTION

The estimated construction-related CAP emissions for Alternative E would not exceed the applicable construction-related mass emissions significance thresholds for reactive organic gases, nitrogen oxides, and particulate matter. Thus, under the more limited construction program of Alternative E, total CAP emissions attributable to construction activities would be reduced in comparison to the proposed 30 Van Ness Avenue Project. With a reduced construction program, average daily construction emissions and annual emissions would be reduced from those of the proposed 30 Van Ness Avenue Project, although Mitigation Measure M-AQ-9a would still be required. This was determined by comparing the total construction square footage per month for Alternative E and the proposed 30 Van Ness Avenue Project, assuming construction emissions are directly proportional to new square footage. Additionally, because Alternative E would not overlap with onsite operational activities, and because construction activities would be less than that proposed for the 30 Van Ness Avenue Project, it is expected that average daily construction emissions would not exceed the BAAQMD significance thresholds, resulting in a less-than-significant impact with implementation of Mitigation Measure M-AQ-9a, similar to the proposed 30 Van Ness Avenue Project, although somewhat reduced.

OPERATION

The air quality impacts associated with estimated operational emissions for CAPs for the proposed 30 Van Ness Avenue Project would not exceed the applicable significance thresholds for reactive organic gases, nitrogen oxides, and particulate matter. Because of the reduced land use program under Alternative E (e.g., reduced building square footage), and assuming mitigation measures (M-AQ-9b) similar to those of the proposed 30 Van Ness Avenue Project would be applied, there would be fewer area and building energy sources of emissions, and, consequently, lower operational emissions compared to the proposed 30 Van Ness Avenue Project. Alternative E would also generate fewer vehicle trips and thus reduce mobile emissions, as shown in **Table 5-5**, p. 5-35. Alternative E would generate a total of 1,254 vehicle trips per day compared to 2,080 vehicle trips per day for the proposed 30 Van Ness Avenue Project. This is a reduction in net trip generation rate by approximately 40 percent. As a result, the average daily CAP emissions attributable to project operations under Alternative E are expected to be reduced compared to the proposed 30 Van Ness Avenue Project, and, like the proposed 30 Van Ness Avenue Project, are expected to result in a less-than-significant impact, although somewhat reduced.

TOXIC AIR CONTAMINANTS

Similar to the proposed 30 Van Ness Avenue Project, construction and operation of Alternative E would generate TACs, including diesel particulate matter. Under Alternative E, the emergency generators to be installed would be similar to those installed under the proposed 30 Van Ness Avenue Project. Therefore, assuming similar mitigation measures (M-AQ-9a and M-AQ-9b) as the proposed 30 Van Ness Avenue Project, the impacts from the generators under Alternative E would be the same as impacts in the proposed 30 Van Ness Avenue Project. As noted above, Alternative E would generate approximately 40 percent fewer vehicle trips per day than the proposed 30 Van Ness Avenue Project. Thus, under the reduced construction and land use programs of Alternative E, less total construction and operational $PM_{2.5}$ and diesel particulate matter would be generated than under the proposed 30 Van Ness Avenue Project, and the maximum health risks for Alternative E are expected to be less than the maximum health risks from the proposed 30 Van Ness Avenue Project. Even though Alternative E is expected to result in lower health risk impacts, project contributions under Alternative E, when added to background values, would still result in a significant health risk impact at the maximally exposed offsite sensitive receptor, although somewhat reduced compared to the proposed project. Risk contribution from Alternative E was determined by individually scaling the maximum risk for construction and operational sources by the construction square footage, or the net trip generator rate. As with the proposed 30 Van Ness Avenue Project, annual average $PM_{2.5}$ concentrations would be attributed largely to existing background sources, and excess cancer risk values are expected to remain above BAAQMD's significance thresholds. Therefore, like the proposed 30 Van Ness Avenue Project, the maximally exposed offsite sensitive receptor location is expected to exceed the Air Pollution Exposure Zone criteria for annual average $PM_{2.5}$ concentrations and excess cancer risk, however impacts would be reduced to less than significant with mitigation.

Cumulative impacts related to $PM_{2.5}$ concentrations and toxic air contaminants under Alternative E would be less than the proposed project because less total construction and operational $PM_{2.5}$ and diesel particulate matter would be generated than under the proposed 30 Van Ness Avenue Project, and the maximum health risks for Alternative E are expected to be less than the maximum health risks from the proposed 30 Van Ness Avenue Project. Mitigation Measures M-AQ-9a, and M-AQ-9b would still be required under Alternative E. With implementation of these mitigation measures, cumulative impacts would be reduced to less than significant.

98 Franklin Street Project Alternatives

The 98 Franklin Street Project would not conflict with or obstruct implementation of the 2017 Clean Air Plan and would not result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status. It would also result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants. Mitigation Measures M-AQ-5c and M-AQ-9c would reduce impacts to less than significant. See Section 3.D, Air Quality, Impacts AQ-1, AQ-6, AQ-9, and AQ-10, for a detailed description of the 98 Franklin Street Project's impacts.

Under Alternative F (98 Franklin Street No Project Alternative), the proposed building at 98 Franklin Street would not be developed and the existing conditions, which include approximately 100 surface parking spots, would remain unchanged. Alternative F would not include demolition or construction activities on the project site, and, consequently, no new sources of air pollutants would be introduced. Existing stationary sources of air pollution on or near the project site and major roadways contributing to air pollution in the project vicinity would remain as they are under existing conditions. Thus, Alternative F would not contribute to any potential cumulative impact related to air quality, resulting in no impact, which is less than the impact of the proposed project.

Alternative G (98 Franklin Street Reduced Intensity Alternative) proposes to build a 162,358-square-foot building that would retain all the land uses in the proposed 98 Franklin Street Project, but with a reduced gross square footage, as shown in **Table 5-3**, p. 5-27. Alternative G proposes to reduce the residential and parking area but would retain the total square footage for school and parking land uses. As a result, under Alternative G, there would be less construction compared to the proposed 98 Franklin Street Project. The construction duration for Alternative G is 20 months compared to the 26-month construction duration for the 98 Franklin Street Project. Overall, Alternative G would result in a reduction in total gross square feet of floor area of approximately 70 percent. Alternative G includes one 450–500 kW emergency generator, which is significantly smaller than the emergency generator equipment analyzed in the proposed 98 Franklin Street Project.

CONSTRUCTION

The estimated construction-related CAP emissions for the proposed 98 Franklin Street Project would not exceed the applicable construction-related mass emissions significance thresholds for reactive organic gases, nitrogen oxides, and particulate matter. Thus, under the more limited construction program of Alternative G, total CAP emissions attributable to construction activities would be reduced in comparison to the proposed 98 Franklin Street Project. With a reduced construction program, average daily and annual construction emissions would also be reduced from those of the proposed 98 Franklin Street Project. This was determined by comparing the total construction square footage per month for Alternative G and the proposed 98 Franklin Street Project, assuming construction emissions are directly proportional to new square footage. Additionally, because Alternative G would not overlap with onsite operational activities, and because construction activities would be limited compared to the proposed 98 Franklin Street Project, it is expected that the average daily and annual construction emissions would not exceed the BAAQMD thresholds and would result in a less-than-significant impact, similar to the proposed 98 Franklin Street Project, although somewhat reduced.

OPERATION

The air quality impacts associated with estimated operational CAP emissions for the proposed 98 Franklin Street Project would not exceed the applicable significance thresholds for reactive organic gases, nitrogen oxides, and particulate matter. Because of the reduced land use program under Alternative G (e.g., reduced building square footage, smaller diesel emergency generator) and assuming similar mitigation measures (M-AQ-5c) as the proposed 98 Franklin Street Project, there would be fewer area, stationary, and building energy sources of emissions, and, consequently, lower operational emissions compared to the proposed project. Alternative G would also generate fewer vehicle trips and thus lower mobile emissions. As shown in **Table 5-5**, p. 5-35, Alternative G would generate a total of 224 vehicle trips per day compared to 543 vehicle trips per day for the proposed 98 Franklin Street Project. This is a reduction in net trip generation rates by approximately 60 percent. As a result, the average daily CAP emissions attributable to project operations under Alternative G would be reduced compared to the proposed 98 Franklin Street Project, and like the proposed 98 Franklin Street Project, are expected to result in a less-than-significant impact, although somewhat reduced.

TOXIC AIR CONTAMINANTS

Similar to the proposed project, construction and operation of Alternative G would generate TACs, including diesel particulate matter. Under Alternative G, a smaller emergency generator would be installed on the project site compared to the proposed 98 Franklin Street Project. Therefore, assuming similar mitigation measures (M-AQ-5c) as those proposed for the 98 Franklin Street Project would be applied to Alternative G, the impacts from the generator would be lower than the impacts in the proposed 98 Franklin Street Project. As noted above, Alternative G would generate approximately 60 percent fewer vehicle trips per day than the proposed 98 Franklin Street Project. Thus, under the reduced construction and land use programs of Alternative G, less total construction and operational $PM_{2.5}$ and diesel particulate matter would be generated than under the proposed 98 Franklin Street Project, and the maximum health risks for Alternative G are expected to be less than the maximum health risks from the proposed 98 Franklin Street Project. Even though Alternative G is expected to result in lower health impacts, project contributions under Alternative G, when added to background values, are expected to remain a significant health risk impact at the maximally exposed onsite and offsite sensitive receptors, although somewhat reduced compared to the proposed project. Risk contribution from Alternative G was determined by individually scaling the maximum risk for construction and operational sources by the construction square footage, or the net trip generator rate. As with the proposed 98 Franklin Street Project, annual average $PM_{2.5}$ concentrations would be attributed largely to existing background sources, and excess cancer risk values are expected to remain above BAAQMD's significance thresholds. Therefore, like the proposed 98 Franklin Street Project, the maximally exposed on- and offsite sensitive receptor locations are expected to exceed the Air Pollution Exposure Zone criteria for annual average $PM_{2.5}$ concentrations and excess cancer risk; therefore, impacts would be reduced to less than significant with mitigation.

Cumulative impacts related to $PM_{2.5}$ concentrations and toxic air contaminants under Alternative G would be less than the proposed project because less total construction and operational $PM_{2.5}$ and diesel particulate matter would be generated than under the proposed 98 Franklin Street Project, and the maximum health risks for Alternative G are expected to be less than the maximum health risks from the proposed 98 Franklin Street Project. Mitigation Measures M-AQ-5c and M-AQ-9c would still be required under Alternative G. With implementation of these mitigation measures, cumulative impacts would be reduced to less than significant.

WIND

THE HUB PLAN AND HUB HSD ALTERNATIVES

Subsequent development projects proposed in the Hub Plan area may combine building exposure, massing, and/or orientation in a way that could lead to an acceleration of wind speeds at the ground level. However, implementation of Mitigation Measures M-WI-1a and M-WI-1b would reduce the potential for a net increase in wind hazard exceedances and the hours of wind hazard exceedances through identification of methods to comply with section 148 and a specific maintenance plan to ensure that wind baffling features are maintained in perpetuity, thereby reducing this impact to a less-than-significant level. See Section 3.E, Wind, Impact WI-1, for a detailed description of the Hub Plan impacts.

Although future construction would still take place under Alternative A (Hub Plan and Hub HSD No Project Alternative), this alternative would not increase allowable building heights within the Hub Plan area, as analyzed in this EIR. The existing zoning and height and bulk controls in the Market and Octavia Area Plan would remain in place, with a general height limit of 85 feet or less, except at the intersections of Market Street/Van Ness Avenue and Mission Street/South Van Ness Avenue where towers ranging from 250 to 400 feet are currently allowed. In the Hub Plan area, with a few exceptions, most existing buildings are three to five stories in height (approximately 30 to 60 feet tall). A new building in the area at 85 feet or less would be the same as, or slightly taller than, existing buildings and, as a result, would have limited wind exposure. The potential increase in wind speeds would not be substantial, and it is unlikely that buildings that would be less than 85 feet in height would create wind hazard exceedances.[3] Regardless, all buildings under Alternative A would be subject to Market and Octavia Area Plan Mitigation Measure B2 (Wind – New Construction) to reduce ground-level wind currents; buildings taller than 85 feet would also be subject to Mitigation Measure B1 (Wind – Buildings In Excess of 85 Feet in Height). Similar to the Hub Plan, Alternative A would result in a less-than-significant wind impact with mitigation (Impact WI-1). In addition, although Alternative A would most likely reduce the Hub Plan's significant and unavoidable cumulative wind impact with mitigation (Impact C-WI-1) because of the generally lower building heights, the impacts would not be eliminated and, therefore, considered significant and unavoidable.

Wind impacts would be essentially the same under Alternative B (Hub Plan Land Use Plan Only Alternative) as under the Hub Plan. Alternative B would allow for development at the same heights and same locations as under the Hub Plan; only the proposed streetscape and street network improvements would be excluded. Similar to the Hub Plan, implementation of Mitigation Measures M-WI-1a and M-WI-1b would be required under Alternative B to reduce the impact to less than significant with mitigation (Impact WI-1). Because of the comparable development assumptions, cumulative impacts related to Alternative B would be significant and unavoidable, the same as the Hub Plan.

Alternative C (Hub Plan Reduced Intensity Alternative) would reduce building heights at five locations, as described above, by reducing upzoning at the following sites by 20 feet: 1 and 10 South Van Ness Avenue, 1500–1540 Market Street, 30 Van Ness Avenue, and 33 Gough Street. These building heights would range from 230 feet to 630 feet high. These height decreases are not expected to significantly reduce wind effects because the upper floors of tall buildings are not the parts of buildings that greatly affect wind speeds, and the impacts of wind under Alternative C would be similar to those under the Hub Plan. Implementation of Mitigation Measures M-WI-1a and M-WI-1b would be required under

---

[3] RWDI, *Market/Octavia Hub Plan Memorandum*, final, June 3, 2019.

Alternative C to reduce the impact to less than significant with mitigation (Impact WI-1). Cumulative impacts associated with Alternative C would be significant and unavoidable with mitigation, similar to the Hub Plan.

30 Van Ness Avenue Project Alternatives

The 30 Van Ness Avenue Project would result in no net increase of test locations exceeding the wind hazard criterion. In addition, the total number of hours with hazardous wind conditions would decrease under the 30 Van Ness Avenue Project, resulting in less-than-significant impacts with mitigation. See Section 3.E, Wind, Impact WI-2, for a detailed description of the 30 Van Ness Avenue Project impacts.

Under Alternative D (30 Van Ness Avenue No Project Alternative), the 30 Van Ness Avenue Project would not be constructed, and the building would be retained at its existing height. This would avoid the less-than-significant wind impact with mitigation under the 30 Van Ness Avenue Project, resulting in no impact under Alternative D. No mitigation would be required.

Alternative E (30 Van Ness Avenue Reduced Intensity Alternative) would include construction of an 11-story building (150 feet in height, compared to 520 feet under the proposed project). This would reduce the wind impact of the 30 Van Ness Avenue Project, but the impact would most likely not be completely avoided because Alternative E would still exceed the heights that are typically assumed to affect wind conditions. Similar to the 30 Van Ness Avenue Project, assuming implementation of Mitigation Measure M-WI-1b, Alternative E would be expected to result in less-than-significant wind impacts with mitigation.

98 Franklin Street Project Alternatives

The 98 Franklin Street Project would result in a slight net decrease of test locations exceeding the wind hazard criterion. In addition, the total number of hours with hazardous wind conditions would decrease under the 98 Franklin Street Project, resulting in less-than-significant impacts with mitigation. See Section 3.E, Wind, Impact WI-2, for a detailed description of the 98 Franklin Street Project impacts.

Under Alternative F (98 Franklin Street No Project Alternative), the 98 Franklin Street Project would not be constructed, and the parking lot would be retained. Therefore, the slight reduction in the number of wind test locations exceeding the wind hazard criterion that would occur under the proposed project would not occur under Alternative F. Regardless, wind conditions under Alternative F would not change compared to existing conditions; therefore, this alternative would result in no impact.

Alternative G (98 Franklin Street Reduced Intensity Alternative) would construct a 10-story building (120 feet in height, as compared to 365 feet under the proposed project). This would reduce the 98 Franklin Street Project's less-than-significant wind impact with mitigation, but the impact would not be completely avoided because Alternative G would still exceed the heights that typically affect wind conditions. Similar to the 98 Franklin Street Project, assuming implementation of Mitigation Measure M-WI-1b, Alternative G would result in less-than-significant wind impacts with mitigation.

SHADOW

THE HUB PLAN AND HUB HSD ALTERNATIVES

The Hub Plan would generate net new shadow on each of the open spaces analyzed and on public streets and sidewalks. In total, 15 existing parks would be affected by the Hub Plan. There are no feasible mitigation measures that would reduce shadow impacts from the Hub Plan on McCoppin Hub, resulting in significant and unavoidable impacts. See Section 3.F, Shadow, Impact SH-1, for a detailed description of the Hub Plan impacts.

Alternative A (Hub Plan and Hub HSD No Project Alternative) would most likely result in significant and unavoidable shadow impacts similar to those of the Hub Plan. Future construction would still take place under Alternative A, and although this alternative would not increase allowable building heights for future development within the Hub Plan area, new buildings could still result in substantial net new shadows on adjacent parks, including McCoppin Hub. Market and Octavia Area Plan Mitigation Measure A1 (Shadow – Parks and Open Space Not Subject to Section 295) would apply to new buildings that would exceed 50 feet in height and shade open space areas that are not subject to section 295. However, implementation of this mitigation measure would reduce, but may not eliminate, potential shadow impacts. Alternative A, therefore, would result in significant and unavoidable shadow impacts (Impacts SH-1 and C-SH-1) on McCoppin Hub, similar to those associated with the Hub Plan.

Shadow impacts would be the same under Alternative B (Hub Plan Land Use Plan Only Alternative) as under the Hub Plan because this alternative would allow for development at the same heights and locations. Only the proposed streetscape and street network improvements would be excluded, which would result in no changes to shadow effects. Alternative B, therefore, would result in the same significant and unavoidable shadow impacts as the Hub Plan (Impacts SH-1 and C-SH-1) on McCoppin Hub. No mitigation measures would reduce these impacts to a less-than-significant level, and shadow impacts under Alternative B would be the same as the Hub Plan: significant and unavoidable.

Alternative C would reduce building heights by 20 feet at five locations: 1 and 10 South Van Ness Avenue, 1500–1540 Market Street, 30 Van Ness Avenue, and 33 Gough Street. In addition, Alternative C may limit heights of other future projects throughout the Hub Plan area because of the requirement that calls for all projects involving historic resources within the Hub Plan area to conform to the Secretary of the Interior's Standards for Rehabilitation. These building heights would range from 230 feet to 630 feet (as compared to 250 feet to 650 feet under the proposed project). These height decreases would reduce shadow impacts compared to the Hub Plan. The height reductions at all of the above-listed sites, except for 33 Gough Street, would reduce the less-than-significant shadow impacts on Patricia's Green, while the height reduction at 33 Gough Street would reduce significant shadow impacts on McCoppin Hub. These reductions in shadow under Alternative C would reduce individual and cumulative shadow effects for the Hub Plan; however, shadow effects would remain significant and unavoidable on McCoppin Hub (Impacts SH-1 and C-SH-1). No feasible mitigation measures would reduce these impacts to a less-than-significant level.

30 Van Ness Avenue Project Alternatives

The 30 Van Ness Avenue Project would generate net new shadow on nearby open spaces, public streets, and sidewalks. In total, eight existing parks would experience increased shadow impacts from the 30 Van Ness Avenue Project, resulting in less-than-significant impacts. See Section 3.F, Shadow, Impact SH-2, for a detailed description of the 30 Van Ness Avenue Project impacts.

Alternative D (30 Van Ness Avenue No Project Alternative) would eliminate the less-than-significant shadow impacts (Impacts SH-2 and C-SH-2) on eight existing parks. Alternative D would not construct a building and would retain the existing 75-foot building, resulting in no new shadow impacts. Alternative E (30 Van Ness Avenue Reduced Intensity Alternative) would construct a substantially shorter building than the 30 Van Ness Avenue Project (11 stories compared to 45 stories); however, the eight existing parks could still experience some minor increases in shadow. Regardless, because of the reduced height of Alternative E, this impact would be less than significant, and no mitigation would be necessary.

98 Franklin Street Project Alternatives

The 98 Franklin Street Project would result in net new shadow cast on the Page and Laguna Mini Park, Patricia's Green, the proposed 11th/Natoma Park Site, and public streets and sidewalks, resulting in less-than-significant impacts. See Section 3.F, Shadow, Impact SH-2, for a detailed description of the 98 Franklin Street Project impacts.

Alternative F (98 Franklin Street No Project Alternative) would eliminate the less-than-significant shadow impacts (Impacts SH-2 and C-SH-2) from the 98 Franklin Street Project. Alternative F would not construct the proposed building but would instead retain the existing parking lot, avoiding all shadow impacts at Page and Laguna Mini Park, Patricia's Green, and 11th/Natoma Park (future) and on public streets and sidewalks. Alternative G (98 Franklin Street Reduced Intensity Alternative) would reduce the less-than-significant shadow impacts from the 98 Franklin Street Project. This alternative would construct a 10-story building compared to the proposed 36-story building, which would reduce shadow impacts at the same parks/open space areas. Alternative G would result in less-than-significant shadow impacts, similar to the 98 Franklin Street Project, and no mitigation would be necessary.

Issues Analyzed in the Initial Study

Impacts Related to the Intensity of Development

The Hub Plan and Hub HSD Alternatives

Given that Alternative A (Hub Plan and Hub HSD No Project Alternative) would have a reduced intensity of development (reduced number of households and residential population) compared to the Hub Plan, it is expected that impacts would be reduced in the areas of land use and planning, utilities and service systems, public services, population and housing, greenhouse gas emissions, and recreation (discussed in the initial study [see Appendix B]). These impacts would be less than significant, as with the proposed Hub Plan.

Similarly, given that Alternatives B (Hub Plan Land Use Plan Only Alternative) and C (Hub Plan Reduced Intensity Alternative) would have a similar or less-intense development plan (fewer than or the same number of households and commercial uses) compared to the Hub Plan, it is expected that impacts would be the same as or less than those of the Hub Plan in the areas of land use and planning, utilities and service systems, public services, population and housing, recreation, and greenhouse gas emissions. All of these impacts would be ***less than significant***, as with the Hub Plan.

30 Van Ness Avenue Project Alternatives

Alternative D (30 Van Ness Avenue No Project Alternative) would eliminate the 30 Van Ness Avenue Project, while Alternative E (30 Van Ness Avenue Reduced Intensity Alternative) would significantly reduce the size of the 30 Van Ness Avenue Project. Both alternatives would significantly reduce the amount of housing and employment resulting from the project, thereby reducing residential uses and overall development intensity in the Hub Plan area and at 30 Van Ness Avenue. Impacts under Alternatives D and E related to land use and planning, utilities and service systems, public services, population and housing, greenhouse gas emissions, and recreation (discussed in the initial study [see Appendix B]) would be less substantial than those of the 30 Van Ness Avenue Project, given the reduced development intensity. These impacts would be ***less than significant***, as with the 30 Van Ness Avenue Project.

98 Franklin Street Project Alternatives

Alternative F (98 Franklin Street No Project Alternative) would eliminate the 98 Franklin Street Project, while Alternative G (98 Franklin Street Reduced Intensity Alternative) would significantly reduce the size of the 98 Franklin Street Project. Both alternatives would reduce the amount of housing and employment resulting from the project, greatly reducing residential uses and overall development intensity in the Hub Plan area and at 98 Franklin Street. Impacts under Alternatives F and G related to land use, utilities and service systems, public services, population and housing, greenhouse gas emissions, open space, and recreation (discussed in the initial study [see Appendix B]) would be less substantial than those of the 98 Franklin Street Project, given the reduced development intensity. These impacts would be ***less than significant***, as with the 98 Franklin Street Project.

Impacts Related to Site-Specific Conditions

The Hub Plan and Hub HSD Alternatives

Impacts under Alternatives A, B, and C related to site-specific conditions, such as those pertaining to biology, geology and soils, hydrology and water quality, land use, aesthetics, and hazardous materials, would be similar to or less severe than those of the Hub Plan. Because future development in the Hub Plan area, regardless of density, would likely cover the majority of the land area on a given project site, variations on density and height would not significantly change the severity of most impacts. For example, a project's impact on street trees (biological resources) or amount of pervious/impervious surfaces (hydrology and water quality) would typically not change if the project were 10 stories or 30 stories. In the majority of instances, a project of any height could involve disturbance of onsite or adjacent offsite vegetation or could result in changes to the impervious surfaces.

Alternative A would result in ground-disturbing activities associated with build-out of the Market Octavia Area Plan and, regardless of density, could result in similar impacts to those of the Hub Plan. However, because Alternative A does not include streetscape and street network improvements, a smaller area would be affected and, thus, overall impacts would be expected to be slightly less severe under Alternative A than under the Hub Plan. Alternative B is similar to Alternative A in that sites throughout the area would be subject to ground-disturbing activities but would not include the streetscape and street network improvements proposed under the Hub Plan. Thus, overall impacts related to ground-disturbing activities, such as impacts related to geology and soils, paleontology, and hydrology and water quality, would be slightly less severe than they would be under the Hub Plan. Development pursuant to Alternative C would be nearly the same as under the Hub Plan, with the exception of slightly lowered building heights at five project sites and the elimination of one site, as discussed above. However, as mentioned above, it is not anticipated that increased height of development on a given site would result in more severe impacts related to ground disturbance. As such, Alternative C would result in similar ground-disturbing impacts when compared to the Hub Plan.

Although ground disturbance associated with Alternatives A, B, and C would be similar to or less than that of the Hub Plan, impacts related to excavation and foundation systems could vary slightly. Alternative A could result in less-intensive excavation activities because overall development in the Hub Plan area would be reduced, resulting in possibly fewer projects, shorter construction timeframes, and reduced intensity. Alternative B would also result in less-intensive excavation activities because it would not include the ground disturbances necessary for construction of the streetscape and street network improvements, as described above. Likewise, Alternative C would result in less-intensive excavation activities, shorter construction timeframes, and less intensity because it would eliminate the availability of one project site (99 South Van Ness Avenue) and shorten other buildings in the Hub Plan area. Therefore, impacts of Alternatives A, B, and C related to tribal cultural resources and geology and soils would be slightly less than under the Hub Plan. The following mitigation measures, included in the initial study, would be applicable to Alternatives A, B, and C, as with subsequent development projects under the Hub Plan and Hub HSD: Mitigation Measures M-TCR-1, M-GE-1, M-BI-1, and M-BI-2 as well as Improvement Measure I-BI-2. With implementation of these mitigation measures, impacts would be less than significant.

In the case of biological resources, the impacts of Alternatives A, B, and C would be less than significant with mitigation, as with the Hub Plan, because the overall level of development under these alternatives would be similar to or slightly less than that of the Hub Plan. Likewise, impacts on geology, greenhouse gases, hydrology and water quality, hazards and hazardous materials, and energy under Alternatives A, B, and C would be less than significant, as with the Hub Plan, because development would be similar to or slightly less than that of the Hub Plan. No impacts on mineral resources or agricultural or forestry resources would occur under Alternatives A, B, and C, as with the Hub Plan, because, there are no such resources in the Hub Plan area.

Impacts from Alternatives A, B, and C related to aesthetics and land use would be less severe than those of subsequent development projects pursuant to the Hub Plan and Hub HSD. Impacts would be less severe under Alternative A compared to the Hub Plan because building height limits would not increase and land use allowances would not change. Under Alternative B, streetscape and street network improvements would not occur, resulting in less severe impacts compared to the Hub Plan. Under Alternative C, development intensity would be reduced at five sites and eliminated at one site, resulting in less severe impacts compared to the Hub Plan. As with the Hub Plan and Hub HSD, impacts from Alternatives A, B, and C related to aesthetics and land use would be less than significant.

30 Van Ness Avenue Project Alternatives

Impacts of Alternative D related to site-specific conditions, such as those related to aesthetics, land use, tribal cultural resources, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials, would be eliminated because the building would not be constructed. Alternative D would result in elimination of all ground-disturbing activities, including excavation of two basement levels with the project, at 30 Van Ness Avenue. Therefore, impacts of Alternative D on tribal cultural resources and geology and soils would be eliminated when compared to the 30 Van Ness Avenue Project. No impacts would occur, and no mitigation would be necessary under Alternative D.

Impacts of Alternative E related to site-specific conditions, such as those related to aesthetics, land use, tribal cultural resources, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials, would be similar to those of the project but slightly reduced because development pursuant to Alternative E would reduce the height and eliminate the residential component of the 30 Van Ness Avenue Project. This would result in less overall construction, shorter construction time periods, less excavation, and less development intensity. It is not anticipated that foundation systems (and, therefore, ground-disturbing activities) would be substantially different from such systems under the project; however, ground-disturbing activities would be reduced because Alternative E would require excavation for one basement level instead of two basement levels. Therefore, the impacts of Alternative E on tribal cultural resources and geology and soils would be less than they would be under the 30 Van Ness Avenue Project. The following mitigation measures, included in the initial study, would be applicable to Alternative E, as with the 30 Van Ness Avenue Project: Mitigation Measures M-TCR-1, M-GE-1, M-BI-1, and M-BI-2 as well as Improvement Measure I-BI-2. This would result in less-than-significant impacts with implementation of mitigation measures.

As with the 30 Van Ness Avenue Project, Alternative E would have less-than-significant impacts related to energy and no impacts on mineral resources or agricultural or forestry resources because none are present within the Hub Plan area.

98 Franklin Street Project Alternatives

Impacts of Alternative F related to site-specific conditions, such as those related to aesthetics, land use, tribal cultural resources, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials, would be eliminated because the building would not be constructed. Alternative F would result in elimination of all ground-disturbing activities, including excavation of two basement levels with the project, at 98 Franklin Street. Therefore, impacts of Alternative F on tribal cultural resources and geology and soils would be eliminated when compared to the 98 Franklin Street Project. No impacts would occur, and no mitigation would be necessary under Alternative F.

Impacts of Alternative G related to site-specific conditions, such as those related to aesthetics, land use, tribal cultural resources, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials, would be similar to those of the project but slightly reduced because development pursuant to Alternative G would reduce the height and the residential component of 98 Franklin Street Project. This would result in less overall construction, shorter construction time periods, less excavation, and less development intensity. It is not anticipated that foundation systems (and, therefore, ground-disturbing activities) would be substantially different from such systems under the project; however, ground-disturbing activities would be reduced because Alternative G would require excavation for one basement level instead of two basement levels. Therefore, impacts of Alternative G on tribal cultural resources as well as geology and soils would be less than they would be under the 98 Franklin Street Project. The following mitigation measures, included in the initial study, would be applicable to Alternative G, as with the 98 Franklin Street Project: Mitigation Measures M-TCR-1, M-GE-1, M-BI-1, and M-BI-2 as well as Improvement Measure I-BI-2. This would result in less-than-significant impacts with implementation of mitigation measures.

As with the 98 Franklin Street Project, Alternative G would have less-than-significant impacts related to energy and no impacts on mineral resources or agricultural or forestry resources because none are present within the Hub Plan area.

Comparison of Alternatives and Environmentally Superior Alternative

Comparison and Summary of Alternatives' Impacts and Ability to Meet Project Objectives

The impacts of each of the seven alternatives and their ability to meet the project objectives compared to the Hub Plan, 30 Van Ness Avenue Project, 98 Franklin Street Project, and Hub HSD are summarized in detail below in **Table 5-6**, p. 5-65, as well as **Table S-3**, p. S-75. All of the alternatives are considered potentially feasible for the purposes of this EIR, as required by CEQA Guidelines section 15126.6(a). With the exception of Alternatives D and F, each of the alternatives would meet the basic project objectives, although some of the alternatives would only partially meet some of the objectives.

Alternative A – Hub Plan and Hub HSD No Project Alternative

Alternative A would likely avoid or reduce some—but not all—of the significant impacts identified for the Hub Plan because it would rely on a program of reduced development intensity that is currently in place under the Market and Octavia Area Plan. Alternative A assumes that growth in the Hub Plan area would occur with or without implementation of the Hub Plan, but that, absent implementation of the Hub Plan and Hub HSD, a smaller percentage of citywide growth would occur within the Hub Plan area. Because Alternative A would not increase the allowable building heights and density as the Hub Plan would, this alternative would very likely result in less development pressure for redevelopment of "underutilized" sites because there would be fewer development incentives. Therefore, while it is likely that Alternative A would substantially reduce all of the identified significant and unavoidable impacts and less-than-significant impacts with mitigation related to intensity of development under the Hub Plan (impacts on built-environment resources, noise, and shadow), it cannot be stated with certainly whether Alternative A would substantially reduce or avoid any of the identified impacts because development would continue to occur within the Hub Plan area under this alternative.

Alternative A would accommodate substantially less new housing than the Hub Plan and Hub HSD. As described above, Alternative A would result in approximately 80 percent fewer housing units than the Hub Plan and Hub HSD. As such, this alternative would be less successful than the Hub Plan in potentially creating housing in an area of the city that needs it.

Alternative A would not prioritize and facilitate the creation of housing in the same way that the Hub Plan and Hub HSD would (by defining neighborhood priorities and guiding growth and development in the area) and would not provide incentives to "maintain a strong preference for housing as a desired use." Because Alternative A would not include the Hub Plan's proposed reconfigurations for major streets and intersections (including those that incentivize people walking, biking, and using transit) or public street and public space improvements, subsequent development projects under Alternative A would not necessarily "establish a functional, attractive, and well-integrated system of public streets and open spaces;" "reconfigure major streets and intersections to make them safer for people walking, bicycling, and driving;" or "take advantage of opportunities to create public spaces" in the Hub Plan area. Without the Hub Plan's proposed zoning changes, designation of the Hub as an HSD, and building height increases, Alternative A would not "encourage residential towers on selected sites" to the degree that it would under the Hub Plan and Hub HSD, nor would it prioritize high-density housing development over other potential development to the degree that it would under the Hub Plan and Hub HSD. Accordingly, Alternative A would only partially meet the project objectives. Alternative A would, however, continue to reflect the objectives established in the Market and Octavia Area Plan because it would maintain the same zoning controls and policies outlined in the plan.

ALTERNATIVE B – LAND USE PLAN ONLY PLAN ALTERNATIVE

Alternative B would have slightly fewer impacts than the Hub Plan at the program level because, although the development program assumptions would be the same, the streetscape and street network improvements would not be implemented. This would reduce impacts associated with construction (transportation, noise, and air quality), and eliminate the built-environment impact on the AWSS because no work would be conducted in city streets.

Alternative B would meet most of the project objectives of the Hub Plan because it would follow the same development program, on the same 18 sites, and at the same heights and densities. Uses and overall projected residential growth under this alternative would be the same. However, because Alternative B would not provide the streetscape and street network improvements in the Hub Plan area that are proposed under the Hub Plan, street network and circulation under this alternative would not as prioritize people walking, biking, and using transit as effectively as the Hub Plan. Therefore, this alternative would not meet the Hub Plan's specific objectives to "establish a functional, attractive, and well-integrated system of public streets and open spaces;" "reconfigure major streets and intersections to make them safer for people walking, bicycling, and driving;" and "take advantage of opportunities to create public spaces". Therefore, Alternative B would be partially consistent with the project objectives of the Hub Plan.

TABLE 5-6. SUMMARY OF ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Objectives	The Hub Plan and Hub HSD	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Hub Plan Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	30 Van Ness Avenue Proposed Project	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	98 Franklin Street Proposed Project	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Hub Plan Objectives										
Create a vibrant mixed-use neighborhood.	Yes	Partially due to reduction in development intensity	Yes	Partially due to reduction in development intensity	NA	NA	NA	NA	NA	NA
Maintain a strong preference for housing as a desired use.	Yes	Partially due to reduction in development intensity	Yes	Partially due to reduction in development intensity	NA	NA	NA	NA	NA	NA
Encourage residential towers on selected sites.	Yes	Partially due to reduction in development intensity	Yes	Yes	NA	NA	NA	NA	NA	NA
Establish a functional, attractive, and well-integrated system of public streets and open spaces.	Yes	No	No	Yes	NA	NA	NA	NA	NA	NA
Reconfigure major streets and intersections to make them safer for people walking, bicycling, and driving.	Yes	No	No	Yes	NA	NA	NA	NA	NA	NA
Take advantage of opportunities to create public spaces.	Yes	No	No	Yes	NA	NA	NA	NA	NA	NA
Hub HSD Objectives										
To allow for ministerial approval of housing projects in the Hub Plan area.	Yes	No	Yes	Yes	NA	NA	NA	NA	NA	NA
To streamline environmental review of housing projects in the Hub Plan area.	Yes	No	Yes	Yes	NA	NA	NA	NA	NA	NA

TABLE 5-6. SUMMARY OF ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Objectives	The Hub Plan and Hub HSD	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Hub Plan Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	30 Van Ness Avenue Proposed Project	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	98 Franklin Street Proposed Project	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
30 Van Ness Avenue Project Objectives										
Create a high-density, mixed-use development that takes advantage of a prominent downtown location along routes for people riding public transit, people walking, and people bicycling by providing a range of residential unit types, office space, and neighborhood-serving retail.	NA	NA	NA	NA	Yes	No	No	NA	NA	NA
Contribute to implementation of the general plan housing element goals for affordable housing by constructing a high-density, mixed-use project, including sufficient office use, which would support the creation of affordable units.	NA	NA	NA	NA	Yes	No	No	NA	NA	NA
Transform the intersection of Market Street and Van Ness Avenue by creating an engaging and vibrant street level that offers a mix of retail uses that enlivens the area through a mix of day and nighttime uses within the project site.	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity	NA	NA	NA

TABLE 5-6. SUMMARY OF ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Objectives	The Hub Plan and Hub HSD	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Hub Plan Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	30 Van Ness Avenue Proposed Project	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	98 Franklin Street Proposed Project	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Develop an underused site, connecting the Civic Center, Mid-Market, and Hayes Valley neighborhoods.	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity	NA	NA	NA
Create a modern, creative, functional workplace environment that attracts office tenants and a residential tower design that maximizes views for residents.	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity	NA	NA	NA
Provide adequate vehicular parking and vehicular and (commercial and passenger) loading access to serve the needs of the project and its visitors.	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity	NA	NA	NA
98 Franklin Street Project Objectives										
Develop a new high school building for the International High School (grades 9–12 of FAIS) in proximity to FAIS's other campus buildings near the intersection of Franklin and Oak streets in San Francisco's Downtown/Civic Center neighborhood and in proximity to public transportation facilities.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Yes

TABLE 5-6. SUMMARY OF ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Objectives	The Hub Plan and Hub HSD	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Hub Plan Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	30 Van Ness Avenue Proposed Project	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	98 Franklin Street Proposed Project	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Replace an underutilized site with a vibrant mixed-use development, including an educational institution of long standing in the city.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity
Leverage the value of the 98 Franklin Street property by partnering with a residential developer to build housing in the air space above the school.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity
Develop a project that enhances the larger community and generally conforms to the objectives and policies of the Hub Plan.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity
Assist FAIS's efforts to develop a new building for the International High School on the lower five floors of the proposed building.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Yes
Increase the supply of housing near the Van Ness Avenue and Market Street intersection.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity

TABLE 5-6. SUMMARY OF ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Objectives	The Hub Plan and Hub HSD	Alternative A: Hub Plan and Hub HSD No Project Alternative	Alternative B: Hub Plan Land Use Plan Only Alternative	Alternative C: Hub Plan Reduced Intensity Alternative	30 Van Ness Avenue Proposed Project	Alternative D: 30 Van Ness Avenue No Project Alternative	Alternative E: 30 Van Ness Avenue Reduced Intensity Alternative	98 Franklin Street Proposed Project	Alternative F: 98 Franklin Street No Project Alternative	Alternative G: 98 Franklin Street Reduced Intensity Alternative
Construct a substantial number of dwelling units, with 18 percent to be affordable for lower-income residents, to contribute to implementation of the general plan housing element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for the city.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity
Create a mixed-use project that is generally consistent with the land use, housing, open space, and other objectives and policies of the Hub Plan.	NA	NA	NA	NA	NA	NA	NA	Yes	No	Partially due to reduction in development intensity

[page left blank intentionally]

ALTERNATIVE C – HUB PLAN REDUCED INTENSITY ALTERNATIVE

Alternative C would avoid or reduce some—but not all—of the significant impacts identified for the Hub Plan because it would reduce the intensity of development in the Hub Plan area by reducing building heights at select sites. This alternative would lessen the severity of impacts identified as significant and unavoidable and less than significant with mitigation. These include:

- Built-environment resources impact (Impact CUL-3) of the Hub Plan
- Cumulative impact contribution on built-environment and historic resources (Impact C-CUL-1) of the Hub Plan
- Cumulative wind impact contribution (Impact C-WI-1) of the Hub Plan
- Shadow impact (Impact SH-1) of the Hub Plan
- Cumulative shadow impact contribution (Impact C-SH-1) of the Hub Plan
- Cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status during construction (Impact AQ-4) of the Hub Plan
- Cumulatively considerable net increase in criteria air pollutants for which the project region is in nonattainment status during operation (Impact AQ-5) of the Hub Plan
- Emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial levels of toxic air contaminants (Impact AQ-7) under the Hub Plan
- Cumulative air quality impacts from ($PM_{2.5}$) and toxic air contaminants (Impact C-AQ-1) under the Hub Plan

Alternative C would not avoid any of the project-specific impacts from the streetscape and street network improvements, such as the built-environment impacts on the AWSS, because it would have the same project-level components as the project.

Alternative C would meet most of the project objectives of the Hub Plan, but it would reduce the development program, resulting in less overall residential growth in the Hub Plan area. As such, this alternative would be less successful than the Hub Plan at maximizing housing in an area of the city that needs it, creating "a vibrant mixed-use neighborhood," and maintaining "a strong preference for housing as a desired use." In addition, Alternative C would not prioritize and facilitate the creation of housing in the same way and to the same degree that the Hub Plan would. Therefore, Alternative C would be partially consistent with the project objectives of the Hub Plan.

ALTERNATIVE D – 30 VAN NESS AVENUE NO PROJECT ALTERNATIVE

Alternative D would avoid all of the project-specific impacts associated with the 30 Van Ness Avenue Project. This alternative would substantially lessen the severity of the following impacts, reducing them from significant and unavoidable or less than significant with mitigation to no impact:

- Construction noise and vibration impacts (Impacts NOI-2 and NOI-3)
- Cumulative construction noise impacts (Impact C-NOI-2)
- Cumulative wind impact contribution (Impact C-WI-1)
- Shadow impact (Impact SH-1)
- Cumulative shadow impact contribution (Impact C-SH-1)
- Archaeological impacts (Impacts CUL-4, CUL-5, and CUL-6)
- Cumulative archaeological impact contribution (Impact C-CUL-3)
- Emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants from construction and operational activities (Impact AQ-9)
- Cumulative air quality impacts from ($PM_{2.5}$) and toxic air contaminants (Impact C-AQ-2)

Alternative D would meet none of the project objectives of the 30 Van Ness Avenue Project. Under Alternative D, the proposed "high-density, mixed-use development" comprising housing units, commercial square footage, parking, and streetscape improvements at 30 Van Ness Avenue would not be implemented, resulting in less residential growth in the Hub Plan area and undermining the residential growth potential and needs of an area of the city that could accommodate it with nearby transit, job centers, services, and growth forecasts. Therefore, Alternative D would not meet or be consistent with any of the 30 Van Ness Avenue Project objectives.

ALTERNATIVE E – 30 VAN NESS AVENUE REDUCED INTENSITY ALTERNATIVE

At the project level, Alternative E would reduce some impacts identified as significant and unavoidable and less than significant with mitigation. This alternative would substantially lessen or avoid the severity of the following impacts associated with project-level actions:

- Cumulative wind impact contribution (Impact C-WI-1)
- Archaeological impacts (Impacts CUL-4, CUL-5, and CUL-6)
- Cumulative archaeological impact contribution (Impact C-CUL-3)
- Emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants from construction and operational activities (Impact AQ-9)
- Cumulative air quality impacts from ($PM_{2.5}$) and toxic air contaminants (Impact C-AQ-2)

Alternative E would meet some of the project objectives of the 30 Van Ness Avenue Project, although it would reduce the development program and residential uses at 30 Van Ness Avenue, resulting in less residential growth. The reduced intensity of Alternative E would not achieve the project's objectives to "create a high-density, mixed-use development;" "contribute to implementation of the general plan housing element goals for affordable housing by constructing a high-density, mixed-use project, including sufficient office use, which would support the creation of affordable units;" and create a "residential tower design that maximizes views for residents."

ALTERNATIVE F – 98 FRANKLIN STREET NO PROJECT ALTERNATIVE

At the project level, Alternative F would avoid all project-specific impacts associated with the 98 Franklin Street Project. This alternative would substantially lessen the severity of the following impacts, reducing them from significant and unavoidable or less than significant with mitigation to no impact:

- Construction noise and vibration impacts (Impacts NOI-2 and NOI-3)
- Cumulative construction noise impacts (Impact C-NOI-2)
- Archaeological impacts (Impacts CUL-4, CUL-5, and CUL-6)
- Cumulative archaeological impact contribution (Impact C-CUL-3)
- Cumulative wind impact contribution (Impact C-WI-1)
- Emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants from construction and operational activities (Impact AQ-9)
- Cumulative air quality impacts from ($PM_{2.5}$) and toxic air contaminants (Impact C-AQ-2)

Alternative F would meet none of the project objectives of the school and residential components of the 98 Franklin Street Project. Under Alternative F, the objectives of the 98 Franklin Street Project, to create a "mixed-use development," consisting of a "new high school building for the International High School" and "a substantial number of dwelling units;" contribute to the general plan housing element goals and the ABAG Regional Housing Needs Allocation for the city; and "increase the supply of housing near the Van Ness Avenue and Market Street intersection" at 98 Franklin Street, would not be fulfilled. Therefore, Alternative F would not be consistent with or meet the project objectives of the 98 Franklin Street Project.

ALTERNATIVE G – 98 FRANKLIN STREET REDUCED INTENSITY ALTERNATIVE

At the project level, Alternative G would not avoid any project-specific impacts because it would retain the same project-level components as the project, at a reduced rate. This alternative would, however, reduce some impacts identified as significant and unavoidable and less than significant with mitigation. This alternative would substantially lessen the severity of the following impacts associated with project-level actions:

- Archaeological impacts (Impacts CUL-4, CUL-5, and CUL-6)
- Cumulative archaeological impact contribution (Impact C-CUL-3)
- Cumulative wind impact contribution (Impact C-WI-1)
- Emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants from construction and operational activities (Impact AQ-9)
- Cumulative air quality impacts from ($PM_{2.5}$) and toxic air contaminants (Impact C-AQ-2)

Alternative G would dampen the 98 Franklin Street Project's residential component objectives to create "a substantial number of dwelling units to contribute to the general plan housing element goals and the ABAG Regional Housing Needs Allocation for the city" and "increase the supply of housing near the Van Ness Avenue and Market Street intersection." Therefore, Alternative F would only partially meet the project objectives of the 98 Franklin Street Project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines require the identification of an environmentally superior alternative to the proposed project (section 15126.6[e]). Based on the analysis and comparison of the impacts of the alternatives presented above, this subsection identifies Alternatives A (Hub Plan and Hub HSD No Project Alternative), D (30 Van Ness Avenue No Project Alternative), and F (98 Franklin Street No Project Alternative) as the environmentally superior alternatives for each of the projects. As described above, Alternatives A, D, and F would do the most to substantially lessen the severity of the significant and unavoidable impacts and less-than-significant impacts with mitigation of the proposed projects related to development intensity under the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street Project, respectively. Alternative A would also avoid all project-specific impacts related to effects of streetscape and street network improvements. Although Alternatives A, D, and F would offer some environmental advantage over the Hub Plan, 30 Van Ness Avenue Project, and 98 Franklin Street Project, significant and unavoidable adverse impacts could still occur under Alternative A because buildout of the area would still occur pursuant to Market and Octavia Area Plan controls but be avoided under Alternatives D and F. It is expected that Alternative A would substantially reduce all of the significant and unavoidable impacts and impacts reduced to less than significant levels with mitigation, but the exact level of impact reduction that would occur cannot be accurately predicted at the program level.

CEQA Guidelines section 15126.6(e)(2) provides that if the "no project" alternative is the environmentally superior alternative, the EIR should also identify an environmentally superior alternative among the other alternatives.

Among the alternatives to the Hub Plan, Alternative B would offer a lower level of impact by avoiding all of the project-specific impacts associated with the streetscape and street network improvements, specifically impacts on built-environment and historic resources and construction-related impacts. However, development intensity in the Hub Plan area would remain the same as the Hub Plan. Alternative C would provide a greater reduction in impacts on built-environment and historic resources and shadow by reducing development intensity in the Hub Plan area while retaining the streetscape and street network improvements. Alternative C would also meet more of the project objectives as compared to Alternative B. Therefore, among the Hub Plan alternatives, Alternative C is the environmentally superior alternative.

Among the 30 Van Ness Avenue Project and its alternatives, Alternative E would be considered the environmentally superior alternative because it would reduce impacts on built-environment and historic resources and shadow impacts when compared to the project while still meeting most of the project's objectives.

Similarly, among the 98 Franklin Street Project and its alternatives, Alternative G would be considered the environmentally superior alternative because it would also reduce impacts on built-environment and historic resources and shadow impacts when compared to the project while still meeting most of the project's objectives.

D. Alternatives Considered but Rejected

In developing the Hub Plan, two individual development projects, and the Hub HSD, the project sponsors considered multiple alternative concepts/designs for development of the project area and the project sites within it, including numerous variations of reduced alternatives. The department reviewed these alternative concepts as potential strategies for reducing or avoiding the significant adverse impacts that were identified for the Hub Plan, two individual development projects, and the Hub HSD. In most cases, the alternative concepts were incorporated into one or more of the seven alternatives selected and analyzed, above. In some cases, however, alternative concepts either were determined to be infeasible, were determined to result in the same or more severe environmental impacts compared to those of the project, or were already covered within the range of selected alternatives. The alternatives considered but rejected and the reasons they have been rejected from further analysis are noted below.

ALTERNATIVE LOCATION

CEQA Guidelines section 15126.6(f)(2) states that alternative locations should be considered if they would avoid or substantially lessen any of the significant effects. For the location of the Hub Plan and Hub HSD, the department has concluded that no feasible alternative locations exist. No comparable plan areas in San Francisco make sense to create a housing priority area in the manner envisioned under the Hub Plan and Hub HSD. Therefore, this concept was rejected from further consideration.

DESIGN ALTERNATIVES

30 VAN NESS AVENUE PROJECT

The project sponsor considered and rejected a project that would be “code compliant” under the Hub Plan (a 120-foot office podium and a 400-foot residential tower) because it would not meet most of the project objectives or avoid the environmental impacts.

98 FRANKLIN STREET PROJECT

The project sponsor considered and rejected the following projects:

- A building at 85 feet (i.e., within current height limit), because it would be inconsistent with the policies and objectives of the proposed Hub Plan.
- A building at 180 feet, because it is anticipated that the project would not lessen any of the identified impacts, would involve increased excavation depths and soil volumes, and would still cast some shadows on public open spaces.
- A building at 320 feet (i.e., current height limit proposed in the Hub Plan), because it is anticipated that a project at that height would not lessen any of the identified impacts or materially decrease shadowing.

6. REPORT PREPARERS

A. EIR AUTHORS

PLANNING DEPARTMENT, CITY AND COUNTY OF SAN FRANCISCO

1650 Mission Street, Suite 400
San Francisco, CA 94103
https://sfplanning.org/environmental-review-documents

ENVIRONMENTAL PLANNING DIVISION

Environmental Review Officer:	Lisa Gibson
Deputy Environmental Review Officer:	Devyani Jain
Principal Environmental Planner:	Tania Sheyner, AICP
Senior Environmental Planner:	Alana Callagy
Senior Environmental Planner:	Elizabeth White
Deputy Environmental Planner:	Colin B. Clarke, AICP
Transportation Planner:	Daniel Wu, AICP
Air Quality:	Jessica Range
Noise:	Christopher Thomas
Historic Preservation:	Jørgen Cleemann
Archaeology:	Allison Vanderslice
Wind and Shadow:	Michael Li

OFFICE OF THE CITY ATTORNEY, CITY AND COUNTY OF SAN FRANCISCO

City Hall, Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

Deputy City Attorney:	Andrea Ruiz-Esquide
Deputy City Attorney:	Peter R. Miljanich

B. EIR CONSULTANTS

ICF (PRIME CONSULTANT)

201 Mission Street, Suite 1500
San Francisco, CA 94105

Project Director:	Kim Avila
Project Manager:	Erin Efner
Deputy Project Manager:	Jennifer Andersen, AICP

ICF PROJECT TEAM

Anthony Ha	Katrina Sukola
Bill Parker	Kirsten Chapman
Caroline Vurlumis	Elizabeth Scott
Cory Matsui	Leo Mena
Diana Roberts	Lily Arias
Dave Buehler	Mario Barrera
Eric Christensen	Melissa Cascella
Gretchen Boyce	Tait Elder
Jessica Viramontes	Tim Messick
John Mathias	Yuka Oiwa
Jon Rusch	Zetta Quick

FEHR & PEERS (TRANSPORTATION)

332 Pine Street, Fourth Floor
San Francisco, CA 94104

Eric Womeldorff, Project Manager
Andy Kosinski

LCW CONSULTING (TRANSPORTATION)

3990 20th Street
San Francisco, CA 94114

Luba C. Wyznyckyj, AICP
Principal

PREVISION DESIGN (SHADOW)

995 Market Street, Second Floor
San Francisco, CA 94103

Adam Phillips, Project Manager

RAMBOLL (AIR QUALITY)

201 California Street, Suite 1200
San Francisco, CA 94111

Michael Keinath, Project Manager
Ted Bowie
Varsha Gopalakrishnan
Libby Koolik

RWDI (WIND)

600 Southgate Drive,
Guelph, Canada, N1G 4P6

Dan Bacon, Project Manager
Raisa Lalui
Kyla Rowntree
Hanqing Wu

C. PROJECT SPONSORS

THE HUB PLAN[1] AND HUB HOUSING SUSTAINABILITY DISTRICT

CITYWIDE PLANNING DIVISION, PLANNING DEPARTMENT, CITY AND COUNTY OF SAN FRANCISCO

1650 Mission Street, Suite 400
San Francisco, CA 94103

Principal Planner:	Lily Langlois
Principal Planner:	Joshua Switzky
Urban Designer and City Planner:	Ben Caldwell

30 VAN NESS AVENUE PROJECT

30 VAN NESS DEVELOPMENT, LLC

71 Stevenson Street, Suite 800
San Francisco, CA 94105
Samidha Thakral
Andy Wang

98 FRANKLIN STREET PROJECT

FRENCH AMERICAN INTERNATIONAL SCHOOL

150 Oak Street
San Francisco, CA 94102
Aaron Levine

RELATED CALIFORNIA, LLC

44 Montgomery Street, Suite 1050
San Francisco, CA 94104
Matt Witte
Balint Simsik

[1] The Hub Plan would amend the 2008 Market and Octavia Area Plan of the San Francisco General Plan, focusing on the easternmost portions of the Market and Octavia Area Plan (Planning Department Case No. 2003.0347).

D. Project Sponsor Attorneys

J. Abrams Law, P.C.

One Maritime Plaza, Suite 1900
San Francisco, CA 94111

Jim Abrams
Nick Roosevelt

E. Project Sponsor Consultants

BMT Fluid Mechanics (Wind)

67 Stanton Avenue
Teddington
TW11 0JY
United Kingdom

T. Syafizan
D. Hankin
R. Stanfield

RWDI (Wind)

600 Southgate Drive,
Guelph, Canada, N1G 4P6

Frank Kriksic
Hanqing Wu
Nishat Nourin
Tammy Gazzola