DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

Balboa Reservoir Project

SAN FRANCISCO PLANNING DEPARTMENT
CASE NO. 2018-007883ENV
STATE CLEARINGHOUSE NO. 2018102028

Draft EIR Publication Date:	AUGUST 7, 2019
Draft EIR Public Hearing Date:	SEPTEMBER 12, 2019
Draft EIR Public Comment Period:	AUGUST 8, 2019 – SEPTEMBER 23, 2019

SAN FRANCISCO
PLANNING
DEPARTMENT

Written comments should be sent to:
San Francisco Planning Department
Attention: Jeanie Poling, Senior Planner
1650 Mission Street, Suite 400 | San Francisco, CA 94103
or by email to: CPC.BalboaReservoir@sfgov.org

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SAN FRANCISCO PLANNING DEPARTMENT

NOTICE OF PUBLIC HEARING

AND AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT

Hearing Date:	September 12, 2019
Time:	Not before 1:00 p.m.
Location:	City Hall, 1 Dr. Carlton B. Goodlett Place, Room 400
Case Type:	Environmental (Draft Subsequent Environmental Impact Report)
Hearing Body:	Planning Commission

PROPERTY INFORMATION

Project Address:	None
Cross Streets:	Northwest of Ocean and Lee avenues
Block /Lot Nos.:	Assessor's Block 3180/Lot 190
Zoning Districts:	P (Public), 40-X and 65-A Height and Bulk District
Plan Area:	Balboa Park Station

APPLICATION INFORMATION

Case No.:	2018-007883ENV
Applicant/Agent:	Reservoir Community Partners LLC c/o Joe Kirchofer AvalonBay Communities LLC
Telephone:	415.284.9082
E-Mail:	Joe_Kirchofer@avalonbay.com

PROJECT DESCRIPTION

The San Francisco Planning Department has prepared a draft subsequent environmental impact report (SEIR) on the Balboa Reservoir project (proposed project), which is described below.

The City and County of San Francisco (the City), acting by and through its San Francisco Public Utilities Commission (SFPUC), selected Reservoir Community Partners LLC (a joint venture between BRIDGE Housing Corporation and Avalon Bay Communities), to act as master developer for the redevelopment of a 17.6-acre site in the West of Twin Peaks area of south central San Francisco known as the Balboa Reservoir. The proposed project would develop the site with mixed-income housing, open space, a childcare facility/community room available for public use, retail space, on- and off-street parking, and new streets, utilities, and other infrastructure. Two different options for the site's residential density to capture a range of possible development on the project site are under consideration: The first is the Developer's Proposed Option (1,100 dwelling units), proposed by Reservoir Community Partners LLC. The second is the Additional Housing Option (1,550 dwelling units), developed by the City to fulfill the objectives of the San Francisco General Plan to maximize affordable housing and housing in transit-rich neighborhoods. Development under each of the two options would entail the same land uses and street configurations, and similar site plans.

The proposed project would amend the general plan and the planning code, and would create a new Balboa Reservoir Special Use District. The special use district would establish land use zoning controls and incorporate design standards and guidelines for the site. The San Francisco Zoning Map would be amended to show changes to zoning and would modify the existing height limits of 40 to 65 feet to height limits of up to 78 feet in the Developer's Proposed Option and up to 88 feet in the Additional Housing Option.

Overall, the proposed project would construct up to approximately 1.8 million gross square feet of uses, including between approximately 1.3 and 1.5 million gross square feet of residential space (1,100 to 1,550 dwelling units plus residential amenities), approximately 10,000 gross square feet of community space (childcare facility and a community room for public use), approximately 7,500 gross square feet of retail, up to 550 residential parking spaces and 750 public parking spaces in the Developer's Proposed Option, and up to 650 residential parking spaces in the Additional Housing Option. The buildings would range in height from 25 to 78 feet in the Developer's Proposed Option and from 25 to 88 feet in the Additional Housing Option. Approximately 4 acres would be devoted to publicly accessible open space. The SFPUC would retain ownership of an 80-foot-wide strip of land located along the southern edge of the site where an underground water transmission pipeline is located.

The proposed project would include transportation and circulation changes, including the extension of existing north-south Lee Avenue across the site, and a new internal street network. The proposed project would also include Ocean Avenue streetscape modifications consisting of the conversion of five 21-foot-long metered parking spaces along the frontage of 1150 Ocean Avenue to metered loading spaces between the hours of 6 a.m. and 2 p.m. (subject to SFMTA approval). The project would include a roadway network that would be accessible for people walking, including people with disabilities, bicycling, and driving. The project would also add new utility infrastructure to supply the site with potable water, wastewater collection, stormwater collection and treatment, electricity, natural gas, and communications.

The proposed project also includes four variants that consider modifications to a limited feature or aspect of the project: Variant 1, Aboveground Public Parking, would locate the 750-space public parking garage above grade on Blocks A and B, with residential units wrapped around the garage; Variant 2, South Street Alignment and Aboveground Public Parking at North End of Site, would shift South Street to the southernmost portion of the site and locate the 750-space public parking garage above grade on Block G, with residential units wrapped around the garage; Variant 3, Assumes Pedestrians and Bicycles Would Not Access the Site via San Ramon Way; and Variant 4, North Street Extension, would shift the offsite north access road from Frida Kahlo Way to align with the project site's North Street.

The project site is not included on any lists compiled pursuant to California Government Code section 65962.5.

DRAFT SEIR: The draft SEIR finds that implementation of the proposed project would result in significant adverse, unavoidable project-level and/or cumulative impacts related to transportation and circulation, noise, and air quality. The draft SEIR provides a detailed project description, an analysis of physical environmental effects of the project, and identification of feasible mitigation measures and alternatives that would avoid or lessen the severity of project impacts. It is available for public review and comment on the San Francisco Planning Department's website at https://sfplanning.org/environmental-review-documents.

The purpose of the public hearing is for the San Francisco Planning Commission and Planning Department staff to receive comments on the adequacy of the draft SEIR. The Planning Commission will not respond to any of the comments or take action on the project at this hearing. Call 415.558.6422 the week of the public hearing for a recorded message giving a more specific time for the hearing. Certification of the final SEIR will be considered at a later hearing. Contact the planner below if you wish to be on the mailing list for future notices.

Public comments on the draft SEIR will be accepted from August 8, 2019 to 5 p.m. on September 23, 2019.

NOTE: The project sponsor has filed an application for the proposed project to be certified by the Governor of California as an environmental leadership development project pursuant to Public Resources Code chapter 6.5 (commencing with section 21178), which provides, among other things, that any judicial action challenging the certification of the SEIR or the approval of the project described in the SEIR is subject to the procedures set forth in Public Resources Code sections 21185 to 21186, inclusive. In accordance with Public Resources Code section 21186(a) and (b), documents and other materials placed in the record of proceedings can be found at www.ab900balboa.com. If the governor certifies this project as an environmental leadership development project, additional notice will be separately provided regarding such certification, in accordance with the requirements of the Public Resources Code.

FOR MORE INFORMATION OR TO SUBMIT COMMENTS ON THE EIR, PLEASE CONTACT:

Planner: Jeanie Poling Telephone: 415.575.9072 E-Mail: CPC.BalboaReservoir@sfgov.org

GENERAL INFORMATION ABOUT PROCEDURES

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.

Only commenters on the draft SEIR will be permitted to file an appeal of the certification of the final SEIR to the Board of Supervisors.

CDs and paper copies of the draft SEIR are available at the Planning Information Center (PIC) counter on the first floor of 1660 Mission Street, San Francisco, and referenced materials are available for review by appointment (call the planner listed below) or at the project's website: www.ab900balboa.com. Written comments should be addressed to Jeanie Poling, Senior Planner, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103, or emailed to **CPC.BalboaReservoir@sfgov.org**. Comments received at the public hearing and in writing will be responded to in a Responses to Comment (RTC) document, which will become part of the final SEIR.

SAN FRANCISCO
PLANNING DEPARTMENT

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

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

DATE: August 7, 2019

TO: Distribution List for the Balboa Reservoir Project Draft Subsequent EIR

FROM: Lisa Gibson, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the Balboa Reservoir Project (Planning Department File No. 2018-007883ENV)

This is the draft of the subsequent environmental impact report (SEIR), including the initial study, for the Balboa Reservoir Project. 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 SEIR, including the initial study, and our responses to those comments. It may also specify changes to this draft SEIR, including the initial study. Those who testify at the hearing on the draft SEIR, including the initial study, 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 SEIR, including the initial study, together with the responses to comments document will be considered by the San Francisco Planning Commission in an advertised public meeting and will be certified as a final SEIR if deemed adequate.

After certification, we will modify the draft SEIR, including the initial study, as specified by the responses to comments document and print both documents in a single publication called the final SEIR. The final SEIR 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 SEIR, including the initial study, you will technically have a copy of the final SEIR.

We are aware that many people who receive the draft SEIR, including the initial study and responses to comments, have no interest in receiving virtually the same information after the SEIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the final SEIR [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 SEIR, 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 SEIR. Any private party not requesting a final SEIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the final SEIR.

Thank you for your interest in this project.

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Balboa Reservoir Project
Draft Subsequent Environmental Impact Report

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Tables

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit
ADA	Americans with Disabilities Act
APEZ	Air Pollutant Exposure Zone
AWSS	Auxiliary Water Supply System
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAC	Community Advisory Committee
CalEEMod	California Emissions Estimator Model
CalMod	Caltrain Modernization Program
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CMP	congestion management plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
D4D	Design for Development
dBA	A-weighted decibel
DEHP	di(2-ethylhexyl) phthalate
DPM	diesel particulate matter
EIR	environmental impact report
EMFAC2017	CARB's OFFROAD and EMission FACtors 2017 model
ERO	Environmental Review Officer
FHWA	Federal Highway Administration
FTA	Federal Transit Administration

Acronym/Abbreviation	Definition
GGT	Golden Gate Transit
GHG	greenhouse gas
gsf	gross square feet
HIN	High Injury Network
hp	horsepower
HVAC	heating/ventilation/air conditioning
in/sec	inches per second
kW	kilowatt
LDA	light-duty auto
Ldn	day-night noise level
LDT1	light-duty tucks 1
LDT2	light-duty tucks 2
LEED	Leadership in Energy and Environmental Design
Leq	Steady-state energy level
Lmax	root mean squared maximum level of a noise source or environment
LOS	level of service
LTS	less-than-significant or negligible impact; no mitigation required
MERV	Minimum Efficiency Reporting Value
MTC	Metropolitan Transportation Commission
MTS	Metropolitan Transportation System
Muni	San Francisco Municipal Railway
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NB	northbound
NI	no impact
NO_2	nitrogen dioxide
NOP	notice of preparation
NOx	reactive organic gases
NPDES	National Pollutant Discharge Elimination System
OEHHA	California Office of Environmental Health Hazard Assessment
OPR	California Governor’s Office of Planning and Research
PCB	polychlorinated biphenyl
PDA	priority development area
PDR	production, distribution, and repair
PEIR	Balboa Park Station Area Plan [Program] EIR
PEIR	program environmental impact report
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter of 10 microns in diameter or less

Acronym/Abbreviation	Definition
$PM_{2.5}$	particulate matter of 2.5 microns in diameter or less
ppm	parts per million
PPV	peak particle velocity
PRC	California Public Resources Code
ROG	reactive organic gas
ROSE	Recreation and Open Space Element
S	significant impact
SamTrans	San Mateo County Transit
SB	Senate Bill
SB	southbound
SEIR	subsequent environmental impact report
SF-CHAMP	San Francisco Chained Activity Modeling Process
SFCTA	San Francisco County Transportation Authority
SFFD	San Francisco Fire Department
SFMTA	City and County of San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SO_2	sulfur dioxide
SU	significant and unavoidable adverse impact; no feasible mitigation available
SUD	Special Use District
SUM	significant and unavoidable adverse impact, after mitigation
TAZ	transportation analysis zones
TCMP	Train Control Modernization Program
TDM	transportation demand management
TNC	transportation network company
TOG	total organic gas
U.S. DOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USGBC	U.S. Green Building Council
VMT	vehicle miles traveled
WETA	Water Emergency Transportation Authority

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SUMMARY

S.1 Project Synopsis

S.1.1 Project Description

The City, acting by and through the San Francisco Public Utilities Commission (SFPUC), selected Reservoir Community Partners LLC (a joint venture between BRIDGE Housing Corporation [a nonprofit affordable housing developer] and Avalon Bay Communities) to act as master developer for the proposed Balboa Reservoir Project.[1] The proposed project would develop a 17.6-acre site with mixed-income housing, open space, a childcare facility/community room available for public use, retail space, on- and off-street parking, and new streets, utilities, and other infrastructure. Two different sets of options for the site's residential density are proposed to capture a range of possible development on the project site: The first is the Developer's Proposed Option (1,100 dwelling units), proposed by Reservoir Community Partners LLC. The second is the Additional Housing Option (1,550 dwelling units), developed by the City to fulfill the objectives of the San Francisco General Plan (the general plan) to maximize affordable housing and housing in transit-rich neighborhoods. Development under each of the two options would entail the same land uses and street configurations, and similar site plans.

The project site is located in the West of Twin Peaks area of south central San Francisco, bounded by City College of San Francisco (City College) to the east, Archbishop Riordan High School to the north, the Westwood Park neighborhood to the west, and multifamily residential development along Ocean Avenue to the south. The project site is owned by the City and County of San Francisco under the jurisdiction of the SFPUC. SEIR Figure 2-1, Project Location, p. 2-2 (in Chapter 2, Project Description), shows the project location.

Under each option, the proposed project would amend the general plan and the San Francisco Planning Code, and would create a new Balboa Reservoir Special Use District (SUD). The special use district would establish land use zoning controls and incorporate design standards and guidelines for the site. The San Francisco Zoning Map would be amended to show changes from the current zoning (P [Public]) to the proposed zoning and would modify the existing height limits of 40 to 65 feet to heights of up to 78 feet in the Developer's Proposed Option and up to 88 feet in the Additional Housing Option. The proposed project would also include improvements to transportation and circulation and utilities infrastructure. The proposed project also includes four

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1 The build-out of the development would involve additional partner firms, including nonprofits Mission Housing Development Corporation and Habitat for Humanity of Greater San Francisco, along with Pacific Union Development Company.

variants that consider modifications to a limited feature or aspect of the project (e.g., street and garage configurations). Each of the variants are described and analyzed in Chapter 5, Variants.

The proposed project is a subsequent activity under the Balboa Park Station Area Plan (area plan). Environmental review of the area plan pursuant to the California Environmental Quality Act (CEQA) was completed in the Balboa Park Station Area Plan [Program] Environmental Impact Report (PEIR),[2] certified in December 2008. The PEIR is a program EIR under CEQA Guidelines section 15168. The San Francisco planning department has determined that a subsequent environmental impact report (SEIR) is warranted for the proposed project pursuant to CEQA Guidelines section 15162, due in part to the fact that the proposed project would result in new significant impacts and substantially more severe significant impacts than previously identified in the PEIR. This SEIR is required to inform the public and decision-makers about the potential significant physical environmental effects of the proposed project, to identify possible ways to minimize the project's significant adverse effects, and to describe and analyze possible alternatives to the proposed project.

Background

The project site is the western portion of a once-larger 28-acre Balboa Reservoir site. In 1957, the San Francisco Water Department (now the SFPUC) began excavation with water storage in mind, creating north and south basins separated by an east–west berm. The SFPUC never filled or used the basins for water storage. In 2011–2012, a series of land transfers between various public agencies resulted in the reconfiguration of the SFPUC's original Balboa Reservoir land holdings. The City removed the east–west berm and reconfigured the 28-acre property into western and eastern portions. City College now owns the 10.4-acre east basin, and the City, through the SFPUC, owns the 17.6-acre west basin (the project site). City College filled and developed the east basin in 2010 with a surface parking lot and its four-story Multi-Use Building.

The project site is bounded on three sides by sloping western, northern, and eastern edges that surround a sunken paved surface at the center. An approximately 30-foot-tall earthen berm is located at the western edge of the property. Along the southern boundary of the site is an 80-foot-wide section of the parcel where a high-pressure underground pipeline maintained by the SFPUC is located. The pipeline runs east–west and delivers water across San Francisco. The site does not contain any permanent structures and currently contains 1,007 surface vehicular parking spaces. The lot provides overflow vehicular parking for City College students, faculty, and staff.[3]

The project site is within a P (Public) Use District and located in 40-X and 65-A Height and Bulk Districts (Figure 2-3, Existing Zoning on Project Site, p. 2-10). The project site is within the central portion of the Balboa Park Station Plan Area. The City adopted the area plan in 2009, but the City did not rezone the site as part of plan adoption. The project site is currently designated P (Public Use) in the Balboa Park Station Area Plan of the general plan.

[2] City and County of San Francisco, *Balboa Park Station Area Plan Final Environmental Impact Report*, Planning Department File No. 2004.1059E, certified December 4, 2008.

[3] City College uses the site under a revocable license granted by the SFPUC.

Project Characteristics

The proposed project would rezone the site and establish development controls for the development of mixed-income housing, open space, community facilities, small retail, parking, streets, and other infrastructure. **Table S-1, Balboa Reservoir Project Characteristics**, summarizes the proposed project's characteristics, including a description of the types and amounts of proposed land uses, details regarding proposed dwelling units, building heights, vehicle and bicycle parking, and other features. As shown in Table S-1, the proposed project would construct up to approximately 1.8 million gross square feet (gsf) of uses, including between approximately 1.3 and 1.5 million gsf of residential space (1,100 to 1,550 dwelling units plus residential amenities), approximately 10,000 gsf of community space (childcare and a community room for public use), approximately 7,500 gsf of retail, up to 550 residential parking spaces and 750 public parking spaces in the Developer's Proposed Option, and up to 650 residential parking spaces (with no public parking spaces) in the Additional Housing Option.[4] The buildings would range in height from 25 to 78 feet in the Developer's Proposed Option and from 25 to 88 feet in the Additional Housing Option. Approximately 4 acres would be devoted to publicly accessible open space under each option. Also under each option, the SFPUC would retain ownership of an 80-foot-wide strip of land located along the southern edge of the site where an underground water transmission pipeline is located.

Figure 2-4, Developer's Proposed Option Site Plan and Height Ranges, p. 2-15, and Figure 2-6, Additional Housing Option Site Plan and Height Ranges, p. 2-18, present the conceptual site plan for each option, illustrating the proposed layout of the development blocks and street network. Development under each of the project options would entail the same land uses and street configurations, and similar site plans. Both project options could include approximately 7,500 gsf of retail space such as a café provided on the ground level of Block A, C, D, E, or F to help activate the approximately 2-acre central park open space area. Under both options, the ground floor of Block B would contain approximately 10,000 gsf of childcare and community space.

The proposed project would also include transportation and circulation changes, and new utilities and other infrastructure. Transportation and circulation changes would include the extension of the existing north–south Lee Avenue across the site and a new internal street network. The project would include a roadway network to be accessible for people walking, including people with disabilities, bicycling, and driving. The proposed project would include a transportation demand management (TDM) program that would implement measures to reduce vehicle trips and encourage sustainable modes of transportation. As part of the proposed special use district, the planning department would adopt design standards and guidelines for building design, streets and circulation, utilities and infrastructure, open space and the public realm. The project would also pursue Leadership in Energy and Environmental Design™ (LEED®) Gold® certification for the proposed buildings.[5]

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4 *Gross square feet* (gsf) includes residential circulation and common area, and it is different from the planning code definition.

5 LEED is a green building certification program developed by U.S. Green Building Council (USGBC). LEED v4 is the newest version of the program. LEED uses a green building rating system designed to reduce the negative environmental impacts of buildings and improve occupant health and well-being. Building projects satisfy prerequisites and earn points to achieve different levels of certification. Based on the number of points achieved, a project then earns one of four LEED® rating levels: Certified®, Silver®, Gold®, or Platinum®.

TABLE S-1
BALBOA RESERVOIR PROJECT CHARACTERISTICS

Project Characteristic	Developer's Proposed Option		Additional Housing Option	
	Metric			
Proposed Land Use Program	**Area (gross square feet)**		**Area (gross square feet)**	
Residential	1,283,000		1,588,000	
Commercial (retail)	7,500		7,500	
Community facilities (childcare and community room for public use)	10,000		10,000	
Parking	339,900 (residential and public)		231,000 (residential only)	
Total Building Area	*1,640,400*		*1,836,500*	
Proposed Dwelling Units	**Number**	**Percentage (approximate)**	**Number**	**Percentage (approximate)**
Studio and 1-bedroom	440	40%	620	40%
2- and 3-bedroom	660	60%	930	60%
Total Dwelling Units	*1,100*	*100%*	*1,550*	*100%*
Proposed Parking	**Number**		**Number**	
Vehicle Parking Spaces Car share spaces	**1,300 [550 residential + 750 public garage]** 7 minimum		**650 [residential only]** 12 minimum	
Bicycle parking[a] Bicycle parking class 1	936		1,100	
Bicycle parking class 2	75		80	
Total Bicycle Parking	*1,011*		*1,180*	
Open Space	**Area (gross square feet)**		**Area (gross square feet)**	
Publicly accessible open space	174,240		174,240	
Private open space	36 square feet per unit if located on balcony, or 48 square feet per unit if commonly accessible to residents			
Building Characteristics				
Stories	2 to 7 stories		2 to 8 stories	
Height	25 to 78 feet		25 to 88 feet	
Ground floor	Blocks A through H could include residential units, lobbies, retail, and common space. Block B would include childcare and community space.		Blocks A through J could include residential units, lobbies, retail, and common space. Block B would include childcare and community space.	
Basements	Blocks A through H would allow but not require one below-grade level of vehicle parking spaces.		Blocks A through J would allow but not require one below-grade level of vehicle parking spaces.	

SOURCES: Reservoir Community Partners LLC, 2018; San Francisco Planning Department, 2018.

NOTE:

a Planning Code section 155.1(a) 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."

Project Construction

Construction is estimated to occur in three main phases over the course of six years, from 2021 to 2027. The construction phasing and durations would be similar for both project options. The initial phase (Phase 0) would include demolition of the parking lot, west side berm, and north and east embankments, followed by grading, excavation, and construction of site infrastructure over 12 months from 2021 to 2022. Two phases of vertical construction would follow, each lasting up to 30 months. The construction activities during Phases 1 and 2 would include, but not be limited to, finish grading, excavation for subgrade parking, construction of building foundations, building construction, architectural coatings, and paving. Construction of Phase 1 would occur from 2022 to 2024. Construction of Phase 2 would occur from 2024 to 2027, after Phase 1 is complete. Buildings constructed in Phase 1 would be occupied during construction of Phase 2.

The phasing of project implementation would be subject to changes due to market conditions and other unanticipated factors. Consequently, construction could be complete as early as 2024 or extend beyond 2027. If construction occurs over a shorter period (e.g., Phases 1 and 2 occurring simultaneously following Phase 0), a relatively larger amount of construction would take place during a relatively shorter period of time, thereby increasing the typical daily construction activity.

Construction phasing is shown in Figure 2-18, Proposed Developer's Option Construction Phasing, p. 2-40 and Figure 2-19, Additional Housing Option Construction Phasing, p. 2-41. The project characteristics presented above (including the total number of residential units, square footage of commercial use, acres of open space, bicycle and automobile spaces) are totals based on full buildout and completion of all phases of the proposed project. Construction would generally occur between the hours of 7 a.m. and 8 p.m., up to seven days a week, consistent with San Francisco Police Code section 2908. Certain construction activities such as large concrete pours, may require earlier start or later finish times to accommodate such time-specific activities. Construction activities that extend beyond normal hours would be subject to review, permitting, and approval by the San Francisco Department of Building Inspection.

S.2 Summary of Impacts and Mitigation Measures

The initial study determined that the following topics would have either no significant impacts or impacts that can be reduced to less than significant with mitigation: land use and land use planning; population and housing; cultural resources; tribal cultural resources; greenhouse gas emissions; wind; shadow; recreation; utilities and services systems; public services; biological resources; geology and soils; hydrology and water quality; hazards and hazardous materials; mineral resources; energy; agricultural and forestry resources; and wildfire. Discussion and analysis of impacts in these resource areas are presented in Appendix B.

Impacts related to aesthetics are not analyzed in the initial study or this SEIR because under CEQA (Public Resources Code section 21099), aesthetics impacts of a mixed-use or employment center project on an infill site located within a transit priority area are not to be considered significant impacts, and the proposed project meets the applicable criteria under this section.

Chapter 3 of this SEIR presents detailed discussion and analysis of the following resources: transportation and circulation; noise; and air quality.

Table S-2, Balboa Reservoir Project Characteristics, p. 4, summarizes all of the impacts of the proposed project, identifies the significance of each impact, and presents the full text of the recommended mitigation measures and improvement measures. Mitigation measures are feasible measures that would avoid, lessen, or reduce significant impacts, and would be required to be implemented if the project is approved. The summary table includes all impacts and mitigation measures applicable to the proposed project options, with the EIR sections presented first, followed by the initial study sections.

As indicated in Table S-2, the SEIR determined that the proposed project would result in significant and unavoidable impacts in the following areas, even with implementation of feasible mitigation measures:

- **Transportation and circulation:** operation of the project could result in off-site project and cumulative loading effects along Lee Avenue that could create potentially hazardous conditions for people bicycling and could substantially delay public transit. The project could also result in a cumulative transit impact related to public transit delay (Impact TR-6b, Impact C-TR-4, and Impact C-TR-6b)
- **Noise:** construction noise levels at noise-sensitive receptors, construction noise increases along roadways, and cumulative construction noise levels at noise-sensitive receptors (Impact NO-1 and Impact C-NO-1)
- **Air quality:** at the project-level and cumulative conditions, criteria air pollutant emissions and health risks under the compressed three-year construction schedule (Impact AQ-2a, Impact AQ-4, Impact C-AQ-1, and Impact C-AQ-2)

S.3 Summary of Project Alternatives

CEQA requires that an EIR must describe and evaluate a reasonable range of alternatives to the proposed project that would avoid or lessen significant impacts of the proposed project, would meet most of the project objectives, and would be feasible. The following four alternatives are analyzed in this SEIR:

- Alternative A: No Project Alternative
- Alternative B: Reduced Density Alternative
- Alternative C: San Ramon Way Passenger Vehicle Access Alternative
- Alternative D: Six-Year Construction Schedule Alternative

The San Francisco Planning Department determined that these four alternatives are potentially feasible and adequately represent the range of alternatives required under CEQA for this project, although the financial feasibility of all alternatives is unknown. These alternatives would lessen but not eliminate the significant and unavoidable adverse impacts related to transportation, air quality, and noise that were identified for the proposed project, as well as meet most of the project objectives. A "no project alternative" is included as Alternative A, as required by CEQA, even though it would not meet the basic project objectives.

S.3.1 Alternative A: No Project Alternative

Description of Alternative

Alternative A assumes that the Balboa Reservoir site would not be developed with the proposed project development described in Chapter 2 of this SEIR. Instead, existing land use controls on the project site would continue to govern site development and would not be changed. The existing site would continue to function as a surface parking lot, which would not constitute a change from existing conditions. The existing physical features of the project site and site circulation would not change.

Summary of Impacts

Under Alternative A, none of the impacts associated with the proposed project options and variants would occur, and would have no significant impacts related to transportation and circulation, noise, and air quality. Therefore, the No Project Alternative would avoid the significant and unavoidable impacts for the proposed project.

S.3.2 Alternative B: Reduced Density Alternative

Description of Alternative

Alternative B would be identical to the proposed project options with respect to the land uses, street configurations, and site plan block configurations. Under Alternative B, it is assumed that the site would be developed with approximately 936,590 gsf of residential uses (800 dwelling units, or 300 and 750 fewer than the Developer's Proposed Option and Additional Housing Option, respectively). This alternative would include 7,500 gsf of retail space and 10,000 gsf of childcare and community space, as under both proposed project options. Similar to the Additional Housing Option, Alternative B would not include a public parking garage. There would be approximately 143,930 gsf of parking (87,070 and 195,970 gsf less than the Additional Housing Option and Developer's Proposed Option, respectively), providing 400 residential parking spaces (150 and 250 fewer than the Additional Housing Option and Developer's Proposed Option, respectively). In general, building heights would be reduced compared to both proposed project options. Other aspects of the proposed project including open space and transportation and circulation improvements would remain same under the alternative.

Summary of Impacts

Alternative B would not avoid or substantially lessen any of the significant and unavoidable impacts that were identified for the proposed project options or variants. Nor would Alternative B result in changes to the significance determinations identified for the proposed project, and all mitigation measures would apply to this alternative. However, Alternative B would have slightly less severe significant impacts than the proposed project options and variants (i.e., the significance determination would be the same but the severity would be reduced) with respect to the following: project-level and cumulative secondary loading impacts associated with operations of the alternative affecting existing loading activity on Lee Avenue and potentially creating hazardous conditions for people bicycling or significant delay that may affect transit; cumulative transit delay; project-level and cumulative construction-related increases in ambient noise levels to sensitive receptors; impacts from construction-related criteria pollutant increases; significant health risk impacts to offsite receptors; the significant cumulative regional air quality impacts; and the significant cumulative regional health risk impacts.

S.3.3 Alternative C: San Ramon Way Passenger Vehicle Alternative

Description of Alternative

Alternative C would provide vehicular access to the project site from the west and could be combined with the proposed project options or Alternative B. Alternative C would have the same mix of land uses, site plans, building footprints, building heights, square footages, and construction characteristics as the proposed project options. Vehicle, bicycle, and pedestrian circulation to and from the site from the south and east would not change. However, instead of bicycle and pedestrian-only access at San Ramon Way, Alternative C would also include passenger car and van access, providing access from the west (but not heavy trucks).

Summary of Impacts

Alternative C would not avoid or substantially lessen any of the significant and unavoidable impacts that were identified for the proposed project options or variants. Nor would Alternative C result in changes to the significance determinations identified for the proposed project, and all mitigation measures would apply to this alternative. However, Alternative C would have slightly less severe significant impacts than the proposed project options and variants (i.e., the significance determination would be the same but the severity would be reduced) with respect to the following: project-level and cumulative secondary loading impacts associated with operations of the alternative affecting existing loading activity on Lee Avenue and potentially creating hazardous conditions for people bicycling or significant delay that may affect transit; and cumulative transit delay. Alternative C would not avoid or substantially lessen the severity of any of the significant and unavoidable impacts identified for the proposed project options or variants. Significant and unavoidable impacts identified for the project that would not be substantially reduced under Alternative C and would still include the following: project-level and cumulative construction-related increases in ambient noise levels to sensitive receptors; impacts from construction-related criteria pollutant increases; significant health risk impacts to offsite receptors; the significant cumulative regional air quality impacts; and the significant cumulative regional health risk impacts.

S.3.4 Alternative D: Six-Year Construction Schedule Alternative

Description of Alternative

Alternative D would have the same mix of land uses, site plans, circulation, building footprints, building heights, square footages, and construction characteristics as the proposed project options. This alternative would not allow a compressed construction schedule. Therefore, under Alternative D, construction phasing for the proposed project options would be phased as described in Chapter 2, Project Description, under the six-year construction schedule.

Summary of Impacts

Alternative D would substantially lessen the severity of the following impacts, reducing it from significant and unavoidable with mitigation to less than significant with mitigation: construction-related criteria pollutant increases; health risk impacts to offsite receptors; cumulative regional air quality impacts; and cumulative regional health risk impacts. Significant and unavoidable impacts identified for the project that would not be substantially reduced under Alternative D would still include the following: project-level and cumulative construction-related increases in ambient noise levels to sensitive receptors; project-level and cumulative secondary loading impacts associated with operations of the alternative affecting existing loading activity on Lee Avenue and potentially creating hazardous conditions for people bicycling or significant delay that may affect transit; and cumulative transit delay.

S.3.5 Environmentally Superior Alternative

Table S-3, Comparison of Environmental Impacts of the Proposed Project Options to Impacts of the Alternatives, p. S-44, presents a summary comparison of the impacts of all the alternatives, focusing only on impacts that would substantially or noticeably be different under the alternatives compared to the project; other impacts not shown on the table would substantially have all the same or similar impacts as identified for the proposed project. Overall, Alternative D, Six-Year Construction Schedule Alternative, is considered the environmentally superior alternative. Alternative D would meet all of the project objectives and would avoid and substantially reduce the severity of project- and cumulative-level impacts related to construction-related air quality and health risks to a less-than-significant level with mitigation.

S.4 Areas of Controversy and Issues to Be Resolved

On October 10, 2018, the San Francisco Planning Department issued a notice of preparation (NOP) of an EIR on the proposed Balboa Reservoir project and made the NOP available on its website. SEIR Chapter 1, Introduction, describes the public review process and summarizes the comments received on the NOP. The NOP was sent to governmental agencies, organizations, and persons interested in the proposed project to initiate the 30-day public scoping period for this SEIR, which started on October 10, 2018, and ended on November 12, 2018. A scoping meeting was held on October 30, 2018, to solicit comments on the scope of this SEIR, including the initial study.

Based on the comments received, controversial issues for the proposed project include:

- The maximum number of housing units that should be analyzed in the subsequent EIR, either as a variant of the proposed project or an alternative to the proposed project;
- Use of the site for other potential land uses such as expansion of City College or preserving the site as open space;
- Sufficiency of impact analysis in a subsequent EIR;
- Impacts related to affordable housing and jobs-housing balance;
- Effects of project operations on public transportation, pedestrian access, and vehicle traffic;
- Secondary environmental effected related to displacement of City College parking currently at the project site and changes in parking availability during operations;
- Impacts from exposure to air pollutants during construction and operation;
- Cumulative impacts resulting from construction of the proposed project and other adjacent projects;
- Effects of construction or operational noise on surrounding educational facilities;
- Effects of the project on public services, including emergency response;
- Sufficiency of existing or proposed utilities to support proposed project; and
- Aesthetic effects of the proposed development, including height of buildings compared to surrounding areas including Westwood Park.

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
SEIR Section 3.B, Transportation and Circulation			
Impact TR-1: Construction of the project would not require a substantially extended duration or intense activity and the secondary effects would not create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling; or substantially delay public transit.	LTS	No mitigation required.	NA
Impact TR-2: Operation of the proposed project would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations.	LTS	No mitigation required.	NA
Impact TR-3: Operation of the proposed project would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.	LTS	No mitigation required.	NA
Impact TR-4: Operation of the proposed project would not substantially delay public transit.	LTS	No mitigation required.	NA
Impact TR-5: Operation of the proposed project would not cause substantial additional VMT or substantially induce automobile travel.	LTS	No mitigation required.	NA

IMPACT CODES:
- NA Not Applicable
- NI No impact
- LTS Less than significant or negligible impact; no mitigation required
- S Significant
- SU Significant and unavoidable adverse impact, no feasible mitigation
- SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact TR-6a: The proposed supply of freight and passenger loading spaces within the project site would not meet peak hour demand by building, but would not create potentially hazardous conditions or significant delay affecting transit, other vehicles, bicycles, or people walking.	LTS	No mitigation required.	NA
Impact TR-6b: Operation of the proposed project, including proposed street network changes, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit.	S	No feasible mitigation identified.	SU
Impact C-TR-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant construction-related transportation impacts.	LTS	No mitigation required.	NA
Impact C-TR-2: The proposed project, in combination with reasonably foreseeable future projects, would not create potentially hazardous conditions for people walking, bicycling, driving, or public transit operations.	LTS	No mitigation required.	NA

IMPACT CODES:

NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact C-TR-3: The proposed project, in combination with reasonably foreseeable future projects, would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.	LTS	No mitigation required.	NA
Impact C-TR-4: The proposed project, in combination with reasonably foreseeable future projects, may result in a potentially significant cumulative impact related to public transit delay and the project could contribute considerably.	S	**Mitigation Measure M-C-TR-4: Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay.** The project sponsor, under either project option, shall monitor cumulative transit travel times for the identified route segments of the K/T Third/Ingleside, 29 Sunset, 43 Masonic, and 49 Van Ness/Mission lines to determine if a route does not meet its performance standard. If applicable, the project sponsor shall implement feasible measures (as developed in consultation with SFMTA) to reduce transit delay and meet the transit travel time performance standard. **Transit Travel Time Performance Standard.** Existing transit travel times and performance standards for the routes subject to this measure, including study segment and time periods, are shown in Table M-C-TR-4. The routes and study segments shown in Table M C TR 4 represent routes and study segments most likely to have a cumulative impact to which the project would have a considerable cumulative contribution.	SUM

TABLE M-C-TR-4
TRANSIT TRAVEL TIME PERFORMANCE STANDARD

Transit Line	Study Segment	Existing Transit Travel Time[a]		Performance Standard[b]	
		A.M. Peak Period	P.M. Peak Period	A.M. Peak Period	P.M. Peak Period
K/T	Jules Ave/Ocean Ave to Balboa Park BART	3:30	8:42	7:30	12:42
	San Jose Ave/Geneva Ave to Dorado Terr/Ocean Ave	3:28	10:03	7:28	11:28
29	Plymouth Ave/Ocean Ave to Mission St/ Persia Ave	8:01	12:09	12:01	16:01

IMPACT CODES:
- NA Not Applicable
- NI No impact
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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		(see nested table below)	

	Mission St/Persia Ave to Plymouth Ave/ Ocean Ave	7:10	9:55	11:10	15:10
43	Frida Kahlo Way/CCSF South Entrance to Foerster St/Monterey Blvd	4:20	4:37	8:20	8:37
	Gennessee St/Monterey Blvd to Frida Kahlo Way/CCSF South Entrance	4:16	4:23	8:16	8:23
49	Frida Kahlo Way/CCSF South Entrance to Mission St/Persia Ave	5:22	10:04	9:22	14:04
	Mission St/Ocean Ave to Frida Kahlo Way/CCSF South Entrance	7:18	11:25	11:18	15:25

SOURCE: Kittelson & Associates, Inc. 2019; SFMTA Automatic Vehicle Location Data, 2019.

NOTES:

a Kittelson staff collected transit travel time data along route segments via onboard surveys. Transit travel times were collected on Tuesday, April 2, 2019, during the weekday a.m. peak period (7 to 9 a.m.) and the weekday p.m. peak period (4 to 6 p.m.). Staff boarded a transit vehicle at the route start point and recorded the travel time between each stop and the dwell time at each stop. Onboard survey data was used to supplement and verify automatic vehicle location data provided by SFMTA. Agencies may determine to update the existing baseline transit travel times closer to commencement of construction.

b The performance standard is calculated as the existing transit travel time plus four minutes, or half the headway of a route with headways of less than eight minutes.

Monitoring and Reporting. The project sponsor shall retain a transportation consultant to monitor and report cumulative transit travel times to determine if a route exceeds its performance standard and the project's fair share contribution to such exceedance, if applicable. The transportation consultant shall be on a list of qualified consultants at the SFMTA or San Francisco Planning Department (agencies). The monitoring plan is subject to agencies' review and approval. All reporting documents are also subject to review and approval by the agencies. The agencies may modify the monitoring and reporting program to account for transit route or transportation network changes, or major changes to the project's development program.

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		Timing. The project sponsor shall retain a transportation consultant within one year of occupancy of one new major building[6] at the City College of San Francisco Ocean Avenue campus (City College) **and** at least 750 units are occupied at the project site. The transportation consultant shall submit its first transit travel time reporting document to the agencies within 18 months of occupancy of one new major building at the City College San Francisco Ocean Avenue campus (City College) and at least 750 units are occupied at the project site. Thereafter, the transportation consultant shall submit annual reporting documents until the project sponsor meets it terms for this measure. *Collection and Reporting Details.* For each reporting document, the transportation consultant shall collect transit travel time data during the a.m. peak (7 to 9 a.m.) and p.m. peak (4 to 6 p.m.) periods during three consecutive, non-holiday weekdays (Tuesday, Wednesday or Thursday) when City College is in typical (i.e., non-finals or spring break week) session. The transportation consultant may use automatic vehicle location on the routes to average the transit travel time data for the peak hour within the peak period of each route in both the inbound and outbound directions along the study segment. Transit travel time surveys shall be conducted within the same month for each reporting period. For the first reporting document, the transportation consultant shall collect and report additional data during the peak periods to determine the project sponsor's fair-share impacts of the cumulative transit delay. The transportation consultant may use methodologies such as cordons, intersection counts, or video cameras to determine traffic congestion and reentry delay attributable to the project and intercept surveys to determine passenger boarding/alighting delay attributable to the project. Agencies will determine if the collecting and reporting of this subsequent data is required for subsequent reporting documents (e.g., if a route exceeds or is close to exceeding the performance standard in a prior reporting document). **Implement Fair-Share of Measures.** If the agencies determine a route does not meet its performance standard and the project contributes greater than or equal to two minutes' delay to that route, the project sponsor shall implement measures that reduce transit travel times. These measures are subject to agency approval and could include: 1. Expansion of measures already included in the project's transportation demand management (TDM) Plan (e.g., increases in tailored transportation marketing services, additional bicycle parking, etc.). The project sponsor shall pay the full cost of implementation.	

[6] A new major building is City College of San Francisco Ocean Avenue campus construction post-2019 that results in a cumulative net addition of more than 50,000 square feet to an existing building(s) or a new building(s), or a new or expanded parking facility of more than a 50,000 square feet.

IMPACT CODES:
NA Not Applicable
NI No impact
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SU Significant and unavoidable adverse impact, no feasible mitigation
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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		2. Measures identified in the City's TDM Program Standards Appendix A (as such appendix may be amended by the Planning Department from time to time) that have not yet been included in the project's TDM Plan. The project sponsor shall pay the full cost of implementation. 3. Other measures not included in the City's TDM Program Standards Appendix A that the agencies agree are likely to reduce transit travel times. These other measures may include off-site capital improvements such as, turn pockets, bus bulbs, queue jumps, turn restrictions, boarding islands, and/or transit signal priority projects. The project sponsor shall pay their fair share, calculated as the project's percent contribution to the increase in transit travel time between baseline and cumulative conditions, of the selected measures. **Term Condition A:** The project sponsor shall monitor, submit reporting documents, and implement their fair share portion of measures for each route until the agencies determine that three consecutive reporting documents demonstrate: (1) the route does not exceed its performance standard or (2) the project does not contribute greater than or equal to two minutes' delay to a route that exceeds its performance standard. **Term Condition B:** The project sponsor shall be subject to the term condition A for every new major building at City College or for every additional 250 occupied dwelling units at the project site. The agencies may waive term Condition B if past reporting documents demonstrate the project has no potential to contribute to greater than or equal to two minutes' delay to a route that exceeds or may exceed its performance standard.	
Impact C-TR-5: The proposed project, in combination with reasonably foreseeable future projects, would not cause substantial additional VMT or substantially induce automobile travel.	LTS	No mitigation required.	NA
Impact C-TR-6a: The proposed project, in combination with reasonably foreseeable future projects, would not create hazardous conditions or significant delay affecting transit, other vehicles, bicycles, or people walking.	LTS	No mitigation required.	NA

IMPACT CODES:

NA Not Applicable	S Significant
NI No impact	SU Significant and unavoidable adverse impact, no feasible mitigation
LTS Less than significant or negligible impact; no mitigation required	SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact C-TR-6b: Operation of the proposed project, including proposed street network changes, in combination with reasonably foreseeable future projects, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit.	S	No feasible mitigation identified.	SU
SEIR Section 3.C, Noise			
Impact NO-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors above levels existing without the project.	S	**Mitigation Measure M-NO-1: Construction Noise Control Measures.** The project sponsor shall implement a project-specific noise control plan that has been prepared by a qualified acoustical consultant and approved by the planning department. The noise control plan may include, but not limited to, the following construction noise control measures: • To the extent that it does not extend the overall schedule, conduct demolition of the parking lot at the northern portion of the project site during periods when Archbishop Riordan High School is not in session. • Require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds). • Require the general contractor to locate stationary noise sources (such as the rock/concrete crusher, or compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and/or to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as 5 dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, to the maximum extent practicable. • Require the general contractor to use impact tools (e.g., jackhammers and pavement breakers) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is	SUM

IMPACT CODES:

NA Not Applicable	S Significant
NI No impact	SU Significant and unavoidable adverse impact, no feasible mitigation
LTS Less than significant or negligible impact; no mitigation required	SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which would reduce noise levels by as much as 10 dBA. • Include noise control requirements for construction equipment and tools, including specifically concrete saws, in specifications provided to construction contractors. Such requirements could include, but are not limited to, erecting temporary plywood noise barriers around a construction site, particularly where a site adjoins noise-sensitive uses; utilizing noise control blankets on a building structure as the building is erected to reduce noise levels emanating from the construction site; performing all work in a manner that minimizes noise; and using equipment with effective mufflers. Moveable sound barrier curtains can provide up to 15 dBA of sound attenuation. • Undertake the noisiest activities during times of least disturbance to surrounding residents and occupants (9 a.m. to 4 p.m.); and select haul routes that avoid the North Access Road and the adjacent Archbishop Riordan High School and residential uses along Plymouth Avenue. • Postpone demolition of the west side berm to the end of Phase 0, to the extent that it does not extend the overall schedule, so that it may serve as a noise attenuation barrier for the receptors to the west for earlier Phase 0 demolition and construction activities. • Notify the planning department's development performance coordinator at the time that night noise permits are requested or as soon as possible after emergency/unanticipated activity causing noise with the potential to exceed noise standards has occurred. The general contractor or other designated person(s) shall prepare a weekly noise monitoring log report that shall be made available to the planning department upon request. The log shall include any noise complaints received, whether in connection with an exceedance or not, as well as any noise complaints received through calls to 311 or DBI if the contractor is made aware of them (for example, via a DBI notice, inspection, or investigation). Any weekly report that includes an exceedance or for a period during which a complaint is received shall be submitted to the planning department within three business days following the week in which the exceedance or complaint occurred. A report also shall be submitted to the planning department at the completion of each construction phase. The report shall document noise levels, exceedances of threshold levels, if reported, and corrective action(s) taken.	
Impact NO-2: Project construction would not generate excessive groundborne vibration that could result in building damage.	LTS	No mitigation required.	NA

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- NA Not Applicable
- NI No impact
- LTS Less than significant or negligible impact; no mitigation required
- S Significant
- SU Significant and unavoidable adverse impact, no feasible mitigation
- SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact NO-3: Operation of the fixed mechanical equipment on the project site could result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, and permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	S	**Mitigation Measure M-NO-3: Fixed Mechanical Equipment Noise Controls.** Noise attenuation measures shall be incorporated into all fixed mechanical equipment (including HVAC equipment) installed on all buildings that include such equipment as necessary to meet noise limits specified in Police Code section 2909. Interior noise limits shall be met under both existing and future noise conditions. Noise attenuation measures could include provision of sound enclosures/barriers, addition of roof parapets to block noise, increasing setback distances from sensitive receptors, provision of louvered vent openings, location of vent openings away from adjacent residential uses, and restriction of generator testing to the daytime hours. After completing installation of the HVAC equipment but before receipt of the Certificate of Occupancy for each building, the project sponsor shall conduct noise measurements to ensure that the noise generated by fixed mechanical equipment complies with section 2909(a) and (d) of the San Francisco Noise Ordinance. No Final Certificate of Occupancy shall be issued for any building until the standards in the Noise Ordinance are shown to be met for that building.	LSM
Impact NO-4: Project traffic would not result in a substantial permanent increase in ambient noise levels.	LTS	No mitigation required.	NA
Impact C-NO-1: Cumulative construction of the proposed project, in combination with construction of reasonably foreseeable future projects, could cause a substantial temporary or periodic increase in ambient noise levels.	S	**Mitigation Measure M-NO-1: Construction Noise Control Measures** (see Impact NO-1)	SUM

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact C-NO-2: Cumulative traffic increases of the proposed project, in combination with reasonably foreseeable future projects, could cause a substantial permanent increase in ambient noise levels in the project vicinity, but the proposed project would not contribute considerably.	LTS	No mitigation required.	NA
Impact C-NO-3: Cumulative mechanical equipment noise of the proposed project, in combination with reasonably foreseeable future projects, could cause a substantial permanent increase in ambient noise levels in the project vicinity, but the proposed project would not contribute considerably.	S	**Mitigation Measure M-NO-3: Fixed Mechanical Equipment Noise Controls** (see Impact NO-3)	LSM
SEIR Section 3.D, Air Quality			
Impact AQ-1: During construction, the proposed project would not generate fugitive dust that could violate an air quality particulate standard, contribute substantially to an existing or projected particulate violation, or result in a cumulatively considerable net increase in particulate concentrations.	LTS	No mitigation required.	NA

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact AQ-2a: During construction, the proposed project would generate criteria air pollutants which would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants.	S	**Mitigation Measure M-AQ-2a: Construction Emissions Minimization.** In the case of the Developer's Proposed Option under the compressed three-year construction schedule or in the case of the Additional Housing Option under either the six-year construction schedule or the compressed three-year construction schedule, the project sponsor or the project sponsor's contractor shall comply with the following: A. *Engine Requirements*. 1. All off-road equipment greater than 25 horsepower shall have engines that meet Tier 4 Final off-road emission standards. 2. Since grid power will be available, portable diesel engines shall be prohibited. 3. Renewable diesel shall be used to fuel all diesel engines unless it can be demonstrated to the Environmental Review Officer (ERO) that such fuel is not compatible with on-road or off-road engines and that emissions of ROG and NOx from the transport of fuel to the project site will offset its NOx reduction potential. 4. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the two-minute idling limit. 4. The contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment, and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications. B. *Waivers*. The ERO may waive the equipment requirements of Subsection (A)(1) if: a particular piece of off-road equipment is technically not feasible; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or, there is a compelling emergency need to use other off-road equipment. If the ERO grants the waiver, the contractor must use the next cleanest piece of off-road equipment, according to the table below. The ERO may waive the equipment requirements of Item A.1 if: a particular piece of off-road equipment with an engine meeting Tier 4 Final emission standards is not regionally available to the satisfaction of the ERO. If seeking a waiver from this requirement, the project sponsor must demonstrate to the satisfaction of the ERO that the health risks from existing sources, project	SUM

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		construction and operation, and cumulative sources do not exceed a total of 10 µg/m3 or 100 excess cancer risks for any onsite or offsite receptor. The ERO may waive the equipment requirements of Item A.2 if: an application has been submitted to initiate onsite electrical power, portable diesel engines may be temporarily operated for a period of up to three weeks until onsite electrical power can be initiated or, there is a compelling emergency. C. *Construction Emissions Minimization Plan*. Before starting onsite ground disturbing, demolition, or construction activities, the contractor shall submit a Construction Emissions Minimization Plan to the ERO for review and approval. The plan shall state, in reasonable detail, how the contractor will meet the requirements of Section A, Engine Requirements. 1. 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. The description 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 usage and hours of operation. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. 2. The project sponsor shall ensure that all applicable requirements of the Construction Emissions Minimization Plan have been incorporated into the contract specifications. The plan shall include a certification statement that the contractor agrees to comply fully with the plan. 3. The contractor shall make the Construction Emissions Minimization Plan available to the public for review onsite during working hours. The contractor shall post at the construction site a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the project at any time during working hours and shall explain how to request to inspect the plan. The contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way. D. *Monitoring*. After start of construction activities, the contractor shall submit quarterly reports to the ERO documenting compliance with the Construction Emissions Minimization Plan. After completion of construction activities and prior to receiving a final certificate of occupancy, the project sponsor shall submit to the ERO a final report summarizing construction activities, including the start and end dates and duration of each construction phase, and the specific information required in the plan. **Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings.** The project sponsor shall use low- and super-compliant VOC architectural coatings during construction. "Low-VOC" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113; however, many	

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NI No impact
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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		manufacturers have reformulated to levels well below these limits. These are referred to as "Super-Compliant" architectural coatings. **Mitigation Measure M-AQ-2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule.** Under the compressed three-year construction schedule for either the Developer's Proposed Option or the Additional Housing Option, the project sponsor or the project sponsor's contractor shall comply with the following: A. *Engine Requirements*. The project sponsor shall ensure that all on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks, concrete trucks, and vendor trucks) be model year 2014 or newer. B. *Waivers*. The ERO may waive the engine year requirements of Subsection (A)(1) for on-road heavy duty diesel vendor trucks delivering materials to the project site, which could include window, door, cabinet, or elevator equipment if each vendor truck entering the project site is used only once for a single delivery of equipment or material. If the ERO grants the waiver, the contractor must demonstrate that that vendor truck would only be used once for a single delivery to the project site. Waivers to the engine year requirements of Subsection (A)(1) shall not be included for vendor trucks that import or off-haul soil, transport heavy earthmoving equipment, or ready-mix concrete, or deliver lumber. C. Construction Emissions Minimization Plan. The construction minimization requirements of Mitigation Measure M-AQ-2a item (C). D. Monitoring. The monitoring requirements of Mitigation Measure M-AQ-2a item (D). **Mitigation Measure M-AQ-2d: Offset Construction Emissions for the Compressed Schedule.** Under the compressed three-year construction schedule for either the Developer's Proposed Option or the Additional Housing Option, the project sponsor shall implement this measure. Prior to issuance of the final certificate of occupancy for the final building associated with Phase 1, the project sponsor, with the oversight of the ERO, shall either: 1. *Directly fund or implement a specific offset project within San Francisco if available* to achieve the equivalent to a one-time reduction of 2.0 tons per year of ozone precursors for the Developer's Proposed Option or 3.2 tons per year of ozone precursors for the Additional Housing Option. To qualify under this mitigation measure, the specific emissions offset project must result in emission reductions within the San Francisco Bay Area Air Basin that would not otherwise be achieved through compliance with existing regulatory requirements. A preferred offset project would be one implemented locally within the City and County of San Francisco. Prior to implementing the offset	

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		project, it must be approved by the ERO. The project sponsor shall notify the ERO within six months of completion of the offset project for verification; or 2. *Pay mitigation offset fees* to the Bay Area Air Quality Management District Bay Area Clean Air Foundation. The mitigation offset fee, currently estimated at approximately $30,000 per weighted ton, plus an administrative fee of no more than 5 percent of the total offset, shall fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. The fee will be determined by the planning department, the project sponsor, and the air district, and be based on the type of projects available at the time of the payment. This fee is intended to fund emissions reduction projects to achieve reductions of 2.0 tons per year of ozone precursors for the Developer's Proposed Option or 3.2 tons per year of ozone precursors for the Additional Housing Option, which is the amount required to reduce emissions below significance levels after implementation of other identified mitigation measures as currently calculated. The agreement that specifies fees and timing of payment shall be signed by the project sponsor, the air district, and the ERO prior to issuance of the first site permit. This offset payment shall total the predicted 2.0 tons per year of ozone precursors for the Developer's Proposed Option or 3.2 tons per year of ozone precursors for the Additional Housing Option above the 10-ton-per-year threshold after implementation of Mitigation Measures M-AQ-2a, M-AQ-2b, and M-AQ-2c. The total emission offset amount is calculated by summing the maximum daily construction of ROG and NOx (pounds/day), multiplying by 260 work days per year, and converting to tons. The amount represents the total estimated operational and construction-related ROG and NOx emissions offsets required. No reductions are needed for operations or overlapping construction and operations.	
Impact AQ-2b: During construction phases that overlap with project operations, the proposed project would generate criteria air pollutants which would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants.	S	**Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (see Impact AQ-2a) **Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings** (see Impact AQ-2a)	LTS

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Table S-2
Summary of Impacts of the Proposed Project—Disclosed in this SEIR including the Initial Study (continued)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact AQ-3: During project operations, the proposed project would result in emissions of criteria air pollutants, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants.	LTS	No mitigation required.	NA
Impact AQ-4: Construction and operation of the proposed project would generate toxic air contaminants, including DPM, which could expose sensitive receptors to substantial pollutant concentrations.	S	**Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (see Impact AQ-2a) **Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications.** To reduce ROG and NOx associated with operation of the proposed project, the project sponsor shall implement the following measures: A. All new diesel backup generators shall: 1. Have engines that meet or exceed California Air Resources Board Tier 4 off-road emission standards which have the lowest NOx emissions of commercially available generators; and 2. Be fueled with renewable diesel, if commercially available, which has been demonstrated to reduce NOx emissions by approximately 10 percent. B. All new diesel backup generators shall have an annual maintenance testing limit of 50 hours, subject to any further restrictions as may be imposed by the Bay Area Air Quality Management District in its permitting process. C. For each new diesel backup generator permit submitted to Bay Area Air Quality Management District for the project, the project sponsor shall submit the anticipated location and engine specifications to the San Francisco Planning Department ERO 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 operator of the facility at which the generator is located shall be required to maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and to provide this information for review to the planning department within three months of requesting such information. **Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility.** If the daycare facility is constructed as part of Phase 1 and is operational while Phase 2 is under construction, the	SUM

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		project sponsor shall install a mechanical ventilation system at the onsite daycare facility located in Block B capable of achieving the protection from particulate matter (PM2.5) equivalent to that associated with a Minimum Efficiency Reporting Value (MERV) 13 filtration (as defined by American Society of Heating, Refrigerating and Air-Conditioning Engineers [ASHRAE] standard 52.2). The system must meet the requirements of San Francisco Health Code article 38 and San Francisco Building Code section 1203.5.	
Impact AQ-5: The proposed project could conflict with implementation of the Bay Area 2017 Clean Air Plan.	S	**Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (see Impact AQ-2a) **Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings** (see Impact AQ-2a) **Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications** (see Impact AQ-4) **Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility** (see Impact AQ-4)	LSM
Impact AQ-6: The proposed project would not create objectionable odors that would affect a substantial number of people.	LTS	No mitigation required.	NA
Impact C-AQ-1: The proposed project, in combination with reasonably foreseeable future projects, would contribute to cumulative regional air quality impacts.	S	**Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (see Impact AQ-2a) **Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings** (see Impact AQ-2a) **Mitigation Measure M-AQ-2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule** (see Impact AQ-2a) **Mitigation Measure M-AQ-2d: Offset Construction and Operational Emissions** (see Impact AQ-2b) **Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications** (see Impact AQ-4)	SUM
Impact C-AQ-2: The proposed project, in combination with reasonably foreseeable future projects, could contribute to cumulative health risk impacts on sensitive receptors.	S	**Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (see Impact AQ-2a) **Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications** (Impact AQ-4) **Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility** (see Impact AQ-4)	SUM

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.1, Land Use and Land Use Planning			
Impact LU-1: The proposed project would not physically divide an established community.	LTS	No mitigation required.	NA
Impact LU-2: The proposed project would not The proposed project would not conflict with any applicable land use plans, policies or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	No mitigation required.	NA
Impact C-LU-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant cumulative impacts to land use.	LTS	No mitigation required.	NA
Initial Study Section E.3, Population and Housing			
Impact PH-1: Construction of the proposed project would not induce substantial unplanned growth in the area.	LTS	No mitigation required.	NA
Impact PH-2: Operation of the proposed project would not induce substantial unplanned growth in the area, either directly (for example, by constructing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure).	LTS	No mitigation required.	NA

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact C-PH-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant cumulative population and housing impacts.	LTS	No mitigation required.	NA
Initial Study Section E.4, Cultural Resources			
Impact CR-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5.	NI	No mitigation required.	NA
Impact CR-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to section 15064.5.	S	**Mitigation Measure M-CR-2: Accidental Discovery of Archeological Resources (PEIR Mitigation Measure AM-1).** The project sponsor shall distribute the planning department archeological resource “ALERT” sheet to the project prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities firm involved in soils-disturbing activities within the project site. Prior to any soils-disturbing activities being undertaken each contractor is responsible for ensuring that the “ALERT” sheet is circulated to all field personnel including, machine operators, field crew, pile drivers, supervisory personnel, etc. The project sponsor shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firm) to the ERO confirming that all field personnel have received copies of the Alert Sheet. Should any indication of an archeological resource be encountered during any soils-disturbing activity of the project, the project Head Foreman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils-disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken. If the ERO determines that an archeological resource may be present within the project area, the project sponsor shall retain the services of an archeological consultant from the pool of qualified archeological consultants maintained by the planning department archeologist. The archeological consultant shall advise the ERO 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	LTS

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		warranted. Based on this information, the ERO 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; or an archeological testing program. If an archeological monitoring program or archeological testing program is required, it shall be consistent with the Environmental Planning (EP) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archeological resource is at risk from vandalism, looting, or other damaging actions. The project archeological consultant shall submit a Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describing 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 FARR shall be sent to the ERO 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 (NWIC) shall receive one copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound copy, one unbound copy and one unlocked, searchable PDF copy on CD of the FARR 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 ERO may require a different final report content, format, and distribution than that presented above.	
Impact CR-3: The proposed project may disturb human remains, including those interred outside of formal cemeteries.	S	**Mitigation Measure M-CR-3: Accidental Discovery of Human Remains and of 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 all applicable state and federal laws. This shall include immediate notification of the 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 Native American Heritage Commission, which shall appoint a Most Likely Descendant (MLD).The MLD shall complete his or her inspection and make recommendations or preferences for treatment and disposition within 48 hours of being granted access to the site (Public Resources Code section 5097.98). The Environmental Review Officer (ERO) shall also be notified immediately upon discovery of human remains. The project sponsor and the ERO shall make all reasonable efforts to develop a Burial Agreement ("Agreement") with the MLD, as expeditiously as possible for the treatment and disposition, with appropriate dignity, of the human remains and associated or unassociated funerary objects (as	LTS

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
		detailed in CEQA Guidelines section 15064.5(d)). The Agreement shall take into consideration the appropriate excavation, removal, recordation, scientific analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. If the MLD agrees to scientific analyses of the remains and/or associated or unassociated funerary objects, the archeological consultant shall retain possession of the remains and associated or unassociated funerary objects until completion of any such analyses, after which the remains and associated or unassociated funerary objects shall be reinterred or curated as specified in the Agreement. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. However, if the ERO, project sponsor, and MLD are unable to reach an agreement on scientific treatment of the remains and associated or unassociated funerary objects, the ERO, in cooperation with the project sponsor, shall ensure that the remains and associated or unassociated funerary objects are stored securely and respectfully until they can be reinterred on the property, with appropriate dignity, in a location not subject to further or future subsurface disturbance (Public Resources Code section 5097.98). Treatment of historic-period human remains and of associated or unassociated funerary objects discovered during soil-disturbing activity additionally shall follow protocols laid out in the project's archeological treatment documents, and any agreement established between the project sponsor, the Medical Examiner and the ERO.	
Impact C-CR-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant cumulative impacts to cultural resources.	LTS	No mitigation required.	NA

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Table S-2
Summary of Impacts of the Proposed Project—Disclosed in this SEIR including the Initial Study (continued)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.5, Tribal Cultural Resources			
Impact TC-1: The proposed project may result in a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074.	S	**Mitigation Measure M-TC-1: Tribal Cultural Resources Interpretive Program.** If the Environmental Review Officer (ERO) determines that a significant archeological resource is present, and if in consultation with the affiliated Native American tribal representatives, the ERO determines that the resource constitutes a tribal cultural resource and that the resource could be adversely affected by the proposed project, the proposed project shall be redesigned so as to avoid any adverse effect on the significant tribal cultural resource, if feasible. If the ERO determines that preservation-in-place of the tribal cultural resource is both feasible and effective, then the archeological consultant shall prepare an archeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archeological consultant shall be required when feasible. If the ERO, in consultation with the affiliated Native American tribal representatives and the project sponsor, determines that preservation-in-place of the tribal cultural resources is not a sufficient or feasible option, the project sponsor shall implement an interpretive program of the tribal cultural resource in consultation with affiliated tribal representatives. An interpretive plan produced in consultation with the ERO and affiliated tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify, as appropriate, 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, artifacts displays and interpretation, and educational panels or other informational displays.	LTS
Impact C-TC-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant cumulative impacts to tribal cultural resources.	LTS	No mitigation required	NA

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.9, Greenhouse Gas Emissions			
Impact C-GG-1: The proposed project would generate greenhouse gas 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 greenhouse gas emissions.	LTS	No mitigation required.	NA
Initial Study Section E.10, Wind			
Impact WI-1: The proposed project would not create wind hazards in publicly accessible areas of substantial pedestrian use.	LTS	No mitigation required.	NA
Impact C-WI-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulatively considerable impacts related to wind.	LTS	No mitigation required.	NA
Initial Study Section E.11, Shadow			
Impact SH-1: The proposed project would not create shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces.	LTS	No mitigation required.	NA

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact C-SH-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulatively considerable impacts related to shadow.	LTS	No mitigation required.	NA
Initial Study Section E.12, Recreation			
Impact RE-1: The project would increase the use of existing neighborhood parks and other recreational facilities, but not to such an extent such that substantial physical deterioration of the facilities would occur or be accelerated or such that the construction of new or expanded facilities would be required.	LTS	No mitigation required.	NA
Impact C-RE-1: The proposed project, in combination with other reasonably foreseeable development within approximately 0.5 mile of the project site, would not increase the use of existing neighborhood parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated or such that the construction of new or expanded facilities would be required.	LTS	No mitigation required.	NA

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.13, Utilities and Service Systems			
Impact UT-1: Sufficient water supplies are available to serve the proposed project 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 may develop new or expanded water supply facilities to address shortfalls in single and multiple dry years but this would occur with or without the proposed project. Impacts related to new or expanded water supply facilities cannot be identified at this time or implemented in the near term; instead, the SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing.	LTS	No mitigation required.	NA
Impact UT-2: The proposed project would not exceed wastewater treatment requirements of the Oceanside Treatment Plant.	LTS	No mitigation required.	NA

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SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact UT-3: The proposed project would not require or result in the construction of new wastewater treatment facilities, new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects, nor would the project result in a determination by the SFPUC that it has inadequate capacity to serve the project's projected demand in addition to its existing commitments.	LTS	No mitigation required.	NA
Impact UT-4: Project construction and operation would result in increased generation of solid waste but would be served by a landfill with sufficient capacity to accommodate the proposed project's solid waste disposal needs.	LTS	No mitigation required.	NA
Impact UT-5: The construction and operation of the proposed project would comply with all applicable statutes and regulations related to solid waste.	LTS	No mitigation required.	NA
Impact C-UT-1: The proposed project, in combination with other reasonably foreseeable future projects, would not result in significant adverse cumulative impacts on utilities and service systems.	LTS	No mitigation required.	NA

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TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.14, Public Services			
Impact PS-1: The proposed project would not be expected to increase demand for public services (in order to maintain acceptable service ratios, response times, or other performance objectives for public services) to the extent that it would require new or physically altered governmental facilities, the construction of which could result in significant environmental impacts.	LTS	No mitigation required.	NA
Impact C-PS-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in cumulative impacts on public services.	LTS	No mitigation required.	NA
Initial Study Section E.15, Biological Resources			
Impact BI-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modification, on any special-status species.	LTS	No mitigation required.	NA
Impact BI-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations.	NI	No mitigation required.	NA

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SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact BI-3: The proposed project would not have a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act or navigable waters as defined in section 10 of the Rivers and Harbors Act through direct removal, filling, hydrological interruption, or other means.	NI	No mitigation required.	NA
Impact BI-4: The proposed project would not interfere with the movement of native resident or migratory wildlife species resident or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	No mitigation required.	NA
Impact BI-5: The proposed project would not conflict with any applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	NI	No mitigation required.	NA
Impact C-BI-1: The project, in combination with other reasonably foreseeable future projects, would not result in cumulative impacts on biological resources.	LTS	No mitigation required.	NA

IMPACT CODES:

NA Not Applicable	S Significant
NI No impact	SU Significant and unavoidable adverse impact, no feasible mitigation
LTS Less than significant or negligible impact; no mitigation required	SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.16, Geology and Soils			
Impact GE-1: The proposed project would not exacerbate the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic ground shaking, seismically induced ground failure, or landslides.	LTS	No mitigation required.	NA
Impact GE-2: The proposed project would not result in substantial loss of topsoil or erosion.	LTS	No mitigation required.	NA
Impact GE-3: The project site would not be located on a geologic unit or soil that is unstable, or that could become unstable, as a result of the proposed project.	LTS	No mitigation required.	NA
Impact GE-4: The proposed project would not create substantial risks to life or property as a result of being located on expansive or corrosive soils.	LTS	No mitigation required.	NA
Impact GE-5: The proposed project would not substantially change the topography or any unique geologic or physical features of the site.	LTS	No mitigation required.	NA

IMPACT CODES:

NA Not Applicable	S Significant
NI No impact	SU Significant and unavoidable adverse impact, no feasible mitigation
LTS Less than significant or negligible impact; no mitigation required	SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact GE-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site.	S	**Mitigation Measure M-GE-6: Inadvertent Discovery of Paleontological Resources.** Before the start of excavation activities, the project sponsor shall retain a qualified paleontologist, as defined by the Society of Vertebrate Paleontology, who is experienced in on-site construction worker training. The qualified paleontologist shall complete an institutional record and literature search and 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 should fossils be encountered, and the laws and regulations protecting paleontological resources. 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 Environmental Review Officer. The fossil should 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 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 and the monitoring level of effort based on the nature of the find, site geology, and the activities occurring on the site, and in consultation with the Environmental Review Officer. 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, and currently accepted scientific practice, and shall be subject to review and approval by the Environmental Review Officer. If required, treatment for fossil remains may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection (e.g., the University of California Museum of Paleontology), and may also include preparation of a report for publication describing the finds. Upon receipt of the fossil collection, a signed repository receipt form shall be obtained and provided to the planning department. The qualified paleontologist shall prepare a paleontological resources report documenting the treatment, salvage, and, if applicable, curation of the paleontological resources. The project sponsor shall be responsible for the costs necessary to prepare and identify collected fossils, and for any curation fees charged by the paleontological repository. The planning 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.	LTS

IMPACT CODES:

NA Not Applicable	S Significant
NI No impact	SU Significant and unavoidable adverse impact, no feasible mitigation
LTS Less than significant or negligible impact; no mitigation required	SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact C-GE-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant cumulative impacts on geology and soils or paleontological resources.	LTS	No mitigation required.	NA
Initial Study Section E.17, Hydrology and Water Quality			
Impact HY-1: Construction of the proposed project would not violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.	LTS	No mitigation required.	NA
Impact HY-2: Operation of the proposed project would not violate a water quality standard or waste discharge requirement or otherwise substantially degrade surface or groundwater quality, and runoff from the proposed project would not provide a substantial source of stormwater pollutants.	LTS	No mitigation required.	NA
Impact HY-3: The proposed project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	No mitigation required.	NA

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact HY-4: The proposed project 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, in a manner that would result in substantial erosion, siltation, or flooding on or off site, and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or impede or redirect flood flows.	LTS	No mitigation required.	NA
Impact HY-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	No mitigation required.	NA
Impact C-HY-1: The proposed project, in combination with reasonably foreseeable future projects in the site vicinity, would not result in a considerable contribution to cumulative impacts on hydrology and water quality.	LTS	No mitigation required.	NA
Initial Study Section E.18, Hazards and Hazardous Materials			
Impact HZ-1: Construction and operation of the proposed project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials.	LTS	No mitigation required.	NA

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	No mitigation required.	NA
Impact HZ-3: The proposed project would not handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LTS	No mitigation required.	NA
Impact HZ-4: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and would not expose people or structures to a significant risk of loss, injury, or death involving fires.	LTS	No mitigation required.	NA
Impact C-HZ-1: The proposed project, in combination with reasonably foreseeable future projects in the project vicinity, would not result in a cumulative impact related to hazards and hazardous materials.	LTS	No mitigation required.	NA

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT—DISCLOSED IN THIS SEIR INCLUDING THE INITIAL STUDY (CONTINUED)

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Initial Study Section E.20, Energy			
Impact EN-1: The project would not result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner.	LTS	No mitigation required.	NA
Impact C-EN-1: The project, in combination with other reasonably foreseeable future projects, would not result in significant adverse cumulative impacts on energy resources.	LTS	No mitigation required.	NA

IMPACT CODES:
NA Not Applicable
NI No impact
LTS Less than significant or negligible impact; no mitigation required
S Significant
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

Table S-3
Comparison of Environmental Impacts of the Proposed Project Options to Impacts of the Alternatives

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
Summary of Impacts for Topics in this SEIR				
SEIR Section 3.B, Transportation and Circulation				
Impact TR-6b: Operation of the proposed project, including proposed street network changes, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. (SU)	NI <	**SU** **<**	**SU** **<**	**SU** **=**
Impact C-TR-4: The proposed project, in combination with reasonably foreseeable future projects, may result in a potentially significant cumulative impact related to public transit delay and the project could contribute considerably. (SUM)	NI <	**SUM** **<**	**SUM** **<**	**SUM** **=**
Impact C-TR-6b: Operation of the proposed project, including proposed street network changes, in combination with reasonably foreseeable future projects, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. (SU)	NI <	**SU** **<**	**SU** **<**	**SU** **=**
All other transportation impacts LTS	NI <	LTS ≤	LTS ≤	LTS =
SEIR Section 3.C, Noise				
Impact NO-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors above levels existing without the project. (SUM)	NI <	**SUM** **<**	**SUM** **=**	**SUM** **=**
Impact NO-3: Operation of the fixed mechanical equipment on the project site could result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, and permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance. (LSM)	NI <	LSM =	LSM =	LSM =
Impact C-NO-1: Cumulative construction of the proposed project, in combination with construction of reasonably foreseeable future projects, could cause a substantial temporary or periodic increase in ambient noise levels. (SUM)	NI <	**SUM** **<**	**SUM** **=**	**SUM** **=**

CEQA SIGNIFICANCE DETERMINATION:

NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.

= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE S-3
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
Impact C-NO-3: Cumulative mechanical equipment noise of the proposed project, in combination with reasonably foreseeable future projects, could cause a substantial permanent increase in ambient noise levels in the project vicinity, but the proposed project would not contribute considerably. (LSM)	NI <	LSM =	LSM =	LSM =
All other noise impacts LTS	NI <	LTS <	LTS =	LTS =
SEIR Section 3.D, Air Quality				
Impact AQ-2a: During construction, the proposed project would generate criteria air pollutants that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (SUM)	NI <	**SUM** **<**	**SUM** **=**	LSM <
Impact AQ-2b: During construction phases that overlap with project operations, the proposed project would generate criteria air pollutants that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (LSM)	NI <	LSM <	LSM =	LSM <
Impact AQ-4: Construction and operation of the proposed project would generate toxic air contaminants, including DPM, which could expose sensitive receptors to substantial pollutant concentrations. (SUM)	NI <	**SUM** **<**	**SUM** **=**	LSM <
Impact AQ-5: The proposed project could conflict with implementation of the Bay Area 2017 Clean Air Plan. (LSM)	NI <	LSM =	LSM =	LSM =
Impact C-AQ-1: The proposed project, in combination with reasonably foreseeable future projects, would contribute to cumulative regional air quality impacts. (SUM)	NI <	**SUM** **<**	**SUM** **=**	LSM <
Impact C-AQ-2: The proposed project, in combination with reasonably foreseeable future projects, could contribute to cumulative health risk impacts on sensitive receptors.(SUM)	NI <	**SUM** **=**	**SUM** **=**	LSM <
All other air quality impacts LTS	NI <	LTS <	LTS =	LTS =

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= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE S-3
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
Summary of Impacts for Topics in the Initial Study				
Initial Study Section E.1, Land Use and Land Use Planning				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.2, Aesthetics				
N/A	N/A	N/A	N/A	N/A
E.3, Population and Housing				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.4, Cultural Resources				
Impact CR-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to section 15064.5. (LSM)	NI <	LSM =	LSM =	LSM =
Impact CR-3: The proposed project may disturb human remains, including those interred outside of formal cemeteries. (LSM)	NI <	LSM =	LSM =	LSM =
All other cultural resources impacts LTS	NI <	LTS =	LTS =	LTS =
E.5, Tribal Cultural Resources				
Impact TC-1: The proposed project may result in a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074. (LSM)	NI <	LSM =	LSM =	LSM =
E.9, Greenhouse Gas Emissions				
All impacts LTS	NI <	LTS <	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE S-3
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
E.10, Wind				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.11, Shadow				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.12, Recreation				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.13, Utilities and Service Systems				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.14, Public Services				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.15, Biological Resources				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.16, Geology, Soils, and Paleontological Resources				
Impact GE-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site. (LSM)	NI <	LSM =	LSM =	LSM =
All other geology, soils, and paleontological resource impacts LTS	NI <	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
a See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE S-3
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
E.17, Hydrology and Water Quality				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.18, Hazards and Hazardous Materials				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.19, Mineral Resources, E.21, Agriculture and Forestry Resources, and E.22, Wildfire				
All impacts NI	NI =	NI =	NI =	NI =
E.20, Energy				
All impacts LTS	NI <	LTS <	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.
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NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

CHAPTER 1
Introduction

1.A Purpose of This SEIR

This subsequent environmental impact report (SEIR), including the initial study, analyzes the physical environmental effects associated with implementation of the proposed project. The San Francisco Planning Department (planning department), as lead agency, has prepared this SEIR in compliance with the provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines (California Public Resources Code sections 21000 et seq., and California Code of Regulations title 14, sections 15000 et seq.), and San Francisco Administrative Code chapter 31. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project.

As described by CEQA and in the CEQA Guidelines, public agencies are charged with the duty to avoid or substantially lessen significant environmental effects where feasible. In undertaking this duty, a public agency has an obligation to balance a project's significant effects on the environment with its benefits, including economic, social, technological, legal, and other non-environmental characteristics.

As defined in CEQA Guidelines section 15382, a "significant effect on the environment" is:

> *… 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. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.*

CEQA requires that before a discretionary decision can be made to approve a project that may cause a significant effect on the environment that cannot be mitigated, an EIR must be prepared. The EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, to identify mitigation measures to lessen or eliminate significant adverse impacts, and to examine feasible alternatives to the project. Thus, prior to taking an approval action on the proposed project, the City and County of San Francisco (the City) must consider the information in this SEIR, including the initial study, and make certain findings with respect to each significant effect that is identified. The information contained in this SEIR, including the initial study, along with other information available through the public review processes, will be reviewed and considered by the decision-makers prior to a decision to approve, disapprove, or modify the proposed project, or to adopt an alternative to the proposed project.

This SEIR, including the initial study, evaluates the whole of the proposed action, including project-level impacts (offsite, onsite, construction-related, operational, direct, and indirect) and cumulative impacts. This is an informational document that does not determine whether a project will be approved, but instead aids in the planning and decision-making process by disclosing the potential environmental impacts associated with construction and operation of the proposed project.

The planning department has prepared this SEIR, including the initial study, with a degree of analysis that provides decision makers with sufficient information to enable them to make a decision that accounts for the environmental consequences of the proposed project. The evaluation of the environmental impacts of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in 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 (CEQA Guidelines section 15151).

1.B Type of EIR

The CEQA Guidelines section 15160 provides for variations in EIRs so that environmental documentation can be tailored to different situations and intended uses, and these variations are not exclusive. As described below, this SEIR relies on a program EIR.

This document is a project-level EIR pursuant to CEQA Guidelines section 15161. This project EIR is tiered from a previously certified program EIR in accordance with the CEQA Guidelines section 15168(c), which provides for environmental review of subsequent activities under the same program. The proposed project is a subsequent activity under the Balboa Park Station Area Plan (area plan). Environmental review of the area plan was completed in the Balboa Park Station Area Plan [Program] Environmental Impact Report (PEIR),[7] certified in December 2008. The PEIR is a program EIR under CEQA Guidelines section 15168. The PEIR analyzed the environmental impacts associated with the development program proposed for the entire plan area, including the project site. Thus, under CEQA, the proposed project at the Balboa Reservoir site is considered a later activity under the area plan program, and this SEIR evaluates the environmental effects of the proposed project relative to the program-level impact analysis in the certified PEIR.

This SEIR is a subsequent EIR to the PEIR pursuant to CEQA Guidelines section 15162, which states that an SEIR is required if the lead agency determines that the proposed project could result in any of the following conditions:

- Substantial changes are proposed in the project that will require major revisions of the previous EIR;
- Substantial changes have occurred with respect to the circumstances under which the project is undertaken; or
- New information of substantial importance, which was not known and could not have been known at the time of certification of the previous EIR, shows that the project could have one

[7] City and County of San Francisco, *Balboa Park Station Area Plan Final Environmental Impact Report*, Planning Department File No. 2004.1059E, certified December 4, 2008.

or more significant effects not discussed in the previous EIR, significant effects previously examined will be substantially more severe than shown in the previous EIR, mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects, or mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects.

The planning department has determined that one or more of these conditions have been met for the proposed project, and that an SEIR is therefore warranted, including the fact that the proposed project would result in new significant impacts and substantially more-severe significant impacts than previously identified in the PEIR.

Furthermore, this SEIR is a focused EIR, in accordance with CEQA Guidelines section 15063(c). In accordance with section 15128, an initial study on the proposed project was prepared as part of this SEIR (see SEIR Appendix B, Initial Study) to identify which of the proposed project's effects were adequately examined in the PEIR and which topics warrant more detailed environmental analysis. The initial study is being published concurrently with this SEIR, and comments will be accepted on the initial study during the public review period for the SEIR.[8] Thus, this SEIR concentrates the environmental analysis on those topics (i.e., transportation and circulation, noise, and air quality) identified in the initial study with the potential to have either new significant effects or substantially more severe significant impacts than were previously identified in the PEIR under the currently proposed project at the Balboa Reservoir site. The remaining environmental topics, as documented in the initial study, were determined to have no new or more severe significant environmental effects than what was previously identified in the PEIR, and these topics are not analyzed in this SEIR.

1.C Balboa Park Station Area Plan PEIR

1.C.1 Balboa Park Station Area Plan Environmental Review

On December 4, 2008, the San Francisco Planning Commission certified the PEIR.[9] The PEIR assessed the development program that was ultimately adopted as the *Balboa Park Station, an Area Plan of the General Plan of the City and County of San Francisco*. The PEIR analyzed transportation/infrastructure and public space improvements and potential future development expected in the near future (2009–2010) or within the long-term (2010–2025) timeline. The near-future development program analyzed also included two individual near-term projects named "Phelan Loop Site" and "Kragen Auto Parts Site," which are now built.[10]

8 Under CEQA Guidelines section 15128, the EIR must contain a brief statement indicating the reasons why certain effects were determined not to be significant and, thus, are not studied in detail in this SEIR.

9 Planning Department Case No. 2004.1059E.

10 The "Phelan Loop Site" (1100 Ocean Avenue) is bounded by Lee Avenue to the west, Ocean Avenue to the south, San Francisco Fire Department Station 15 to the east, and Balboa Reservoir to the north. (It is noted that Phelan Loop is now referred to as the City College Terminal. The terminology here is from the PEIR.) This site is a mixed-use development with residential above ground-floor retail and public open space (Unity Plaza). The "Kragen Auto Parts Site" (1150 Ocean Avenue) is bounded by Ingleside Branch Library to the west, Ocean Avenue to the south, Lee Avenue to the east, and the Balboa Reservoir to the north. This site is a mixed-use development with residential above ground-floor retail.

On April 7, 2009, the San Francisco Board of Supervisors adopted the area plan. The Mayor subsequently signed the legislation for the area plan, which was enacted on May 18, 2009.[11] The planning department has prepared one addendum to the PEIR, dated July 10, 2015, analyzing the amendment of San Francisco Planning Code section 737.1 and Zoning Map Sheet ZN12 to rezone 19 parcels from RH-2 (12 parcels) or RM-1 (7 parcels) to Ocean Avenue Neighborhood Commercial Transit (NCT).[12] The planning department determined that the addendum was sufficient to satisfy CEQA environmental review requirements for no further additional analysis (CEQA Guidelines section 15164).

The proposed project at the Balboa Reservoir site is the first development project under the adopted area plan in which conditions triggering a subsequent EIR are met. This SEIR is the first project-level EIR tiering from the PEIR.

1.C.2 Summary of the Balboa Park Station Area Plan PEIR

As described above, this EIR is a subsequent EIR to the PEIR certified in 2008, as supplemented by one addendum issued in 2015. The PEIR evaluated the potential environmental effects of the development of the plan area, approximately 210 acres in size and located in south central San Francisco, generally bounded by parcels along the northern edge of Ocean Avenue, the southern boundary of Archbishop Riordan High School, Judson Avenue and Havelock Street to the north; the northeastern edge of City College, and San Jose and Delano avenues to the east; Niagara and Mount Vernon avenues, and parcels along the southern edges of Geneva and Ocean avenues to the south; and Manor Drive to the east.

In general, the area plan defined as the project description and analyzed in the PEIR consisted of the following:

- Street network changes for Geneva, San Jose, Ocean, and Phelan avenues;
- Transit facility changes for San Francisco Municipal Transportation Agency (SFMTA) and Bay Area Rapid Transit facilities;
- Changes to existing open space and proposed new open spaces;
- Urban design and architectural guidelines;
- Changes to land use policies;
- Changes to the planning code; and
- Three tiers of development programs.

The three-tier development program was based on the amount of development that could occur in the plan area over short term (Tier 1 – 2010), long-term (Tier 2 – up to 2025), and beyond year 2025 (Tier 3). The overall land use program for the plan area evaluated in the PEIR assumed an

[11] Ordinance No. 0058-09 Balboa Park Station Area Plan – monitoring program, Ordinance No. 0059-09 Zoning Map Amendments in connection with the Balboa Park Station Area Plan, Ordinance No. 0060-09 Approving General Plan Amendments in connection with the Balboa Park Station Area Plan, and Ordinance No. 0061-09 Planning Code Amendments in connection with the Balboa Park Station Area Plan.

[12] San Francisco Planning Department, *Addendum to Environmental Impact Report, Case No. 2015-008342ENV*, Board of Supervisors File No. 150271, July 10, 2015.

additional 1,780 residential units, 104,620 square feet of commercial use, 22,853 square feet of cultural/institutional use, and 129,300 square feet of open space. The land use program for the Balboa Reservoir project site evaluated in the PEIR assumed 500 residential units and 100,000 square feet of open space under the long-term (Tier 2) timeframe.

The PEIR analyzed the environmental impacts associated with implementation of the area plan and identified a suite of mitigation measures for avoiding or reducing significant environmental impacts. A topic-by-topic summary of impacts and mitigation measures presented in the PEIR is included under each respective environmental topic in this SEIR, including the initial study. SEIR Appendix H, Balboa Park Station Area Plan PEIR Mitigation Measures, lists all of the mitigation measures from the PEIR and indicates those applicable to the proposed project.

As required under CEQA, the PEIR identified and analyzed alternatives that would reduce or avoid identified significant impacts of the area plan and meet most of the plan's objectives. The two alternatives analyzed included: No Project alternative; and No Transportation Improvements alternative. The PEIR determined that the No Project alternative would avoid impacts on roadways, intersections, and transit operations identified for the plan area, and no significant and unavoidable impacts on historical resources would occur. The PEIR also determined that the No Transportation Improvements alternative would result in fewer impacts on roadways, intersections, and transit operations, and the same significant unavoidable impacts on historical resources. The No Transportation Improvements alternative was identified as the environmentally superior alternative in the PEIR.

Following certification of the PEIR and as part of the approval process for the area plan, CEQA Findings were adopted by the City and County of San Francisco.[13]

1.D CEQA Environmental Review Process

CEQA Guidelines sections 15080 to 15097 set forth the EIR process, which includes multiple phases involving notification and input from responsible agencies and the public. The main steps in this process are described below.

1.D.1 Notice of Preparation of an Environmental Impact Report and Public Scoping

The City and Reservoir Community Partners LLC entered into an exclusive negotiating agreement, as authorized by SFPUC Commission resolution no. 17-0225 in November 2017. In April 2018, the San Francisco Board of Supervisors adopted resolution no. 85-18, finding the proposed development of the Balboa Reservoir site to be fiscally feasible under San Francisco Administrative Code chapter 29. This resolution authorized the filing of the environmental application and the San Francisco Planning Department to undertake environmental review as required by San Francisco Administrative Code chapter 31 and the California Environmental Quality Act (CEQA).

[13] City and County of San Francisco, Planning Commission Motion No. 17775, December 4, 2008.

Reservoir Community Partners LLC filed an environmental evaluation application with the planning department on May 31, 2018. This filing initiated the environmental review process. The EIR process includes an opportunity for the public to review and comment on the proposed project's potential environmental effects and to further inform the environmental analysis.

On October 10, 2018, the planning department issued the notice of preparation (NOP) of an EIR on the proposed Balboa Reservoir project and made the NOP available on its website. The NOP was sent to governmental agencies, organizations, and persons interested in the proposed project, and publication of the NOP initiated the 30-day public scoping period for this SEIR, which started on October 10, 2018, and ended on November 12, 2018. The NOP included a description of the proposed project and a request for agencies and the public to submit comments on the scope of environmental issues that should be addressed in this SEIR. The NOP is included as SEIR Appendix A, Notice of Preparation.

The planning department held a public scoping meeting on Tuesday, October 30, 2018, at the Lick Wilmerding High School Cafeteria, 755 Ocean Avenue, San Francisco to receive oral comments on the scope of the SEIR. During the scoping period, a total of 84 comment letters and emails were submitted to the planning department and 16 speakers provided oral comments at the public scoping session. These comments received in response to the NOP during the public scoping period, both written and oral, are available for review at the planning department as part of Case File No. 2018-007883ENV. The planning department has considered all of these comments in preparing this SEIR for the proposed project.

1.D.2 Scoping Comments

The planning department has considered the comments made by the public and agencies in preparation of this SEIR, as summarized in **Table 1-1, Summary of Scoping Comments**. Comments on the NOP that relate to environmental issues are addressed and analyzed throughout this SEIR and initial study (see SEIR Appendix B). The scoping comments, as summarized in this table, also indicate areas of controversy known to the lead agency and issues to be resolved, per CEQA Guidelines section 15123.

TABLE 1-1
SUMMARY OF SCOPING COMMENTS

SEIR or Initial Study Section	Comment
SEIR	
Chapter 1 Introduction	The Introduction should include explanations and/or descriptions of: • Anticipated date of initial study publication; • Sufficiency of impact analysis in a subsequent EIR; • Accuracy of Balboa Park Station Area Plan's program-level significance determinations on components related to or included in the proposed project; • Changes related to the loss of potential water storage in the reservoir; and • Additional Housing Option: Should be deferred until Balboa Reservoir Community Advisory Committee (CAC) and the public has a chance to fully review.

SEIR or Initial Study Section	Comment
Chapter 2 Project Description	The SEIR should include an explanation and/or descriptions of: • Proposed zoning changes; • Whether the planning department received community input from the Balboa Reservoir CAC; • The proposed project's consideration for open space, including for the public, per the Open Space Element of the Balboa Park Station Area Plan; and • Affordable housing locations and quantities, and reserved housing for teachers.
Section 3.A Cumulative	• Address cumulative impacts for each relevant section; and • Study cumulative impacts of Performing Arts Education Center and overlapping construction and parking impacts, and cumulative impacts from the City College Facilities Master Plan.
Section 3.B Transportation and Circulation	• Address effects of the project on traffic, public transit, bicycle, and pedestrian facilities: – Increased traffic volumes and congestion along Frida Kahlo Way, Ocean Avenue, and Lee Avenue; – intermodal access to the site and the potential to overwhelm Muni and BART systems; – increased pedestrian safety and access points; – vehicular access from Frida Kahlo Way and I-280; – additional modifications to freeway access; – emergency vehicle access; – additional parking structures; – congestion due to transportation network companies and delivery vehicle; and – modifications to existing public transportation to alleviate traffic concerns. • Study vehicular access from San Ramon Way; • The Balboa Park Station Area Plan's recommendations and impacts to public transit; and • Transportation analysis should take into account parking considerations, especially for students and teachers.
Section 3.C Noise	• Exposure of students at Archbishop Riordan High School and City College to construction noise; • Address ways to minimize construction noise impacts; • Increase noise levels from the project; and • Cumulative noise impacts with City College projects.
Section 3.D Air Quality	• Evaluate air quality impacts on surrounding areas from the increased vehicle traffic and from construction.
Chapter 6 Alternatives	• Evaluate alternatives that incorporate potential design changes that may be necessary to address significant traffic and circulation impacts such as: – a reconfigured site plan that provides additional vehicular access from Frida Kahlo Way and I-280; – additional modifications to freeway access, emergency vehicle access; and – additional parking structures and modifications to existing public transportation to alleviate traffic concerns; • Evaluate alternatives that include a higher and lower number of housing units; • Evaluate affordable housing alternatives; • Evaluate alternatives that incorporate potential design changes that may be necessary to address impacts related to construction staging areas; and • Evaluate alternative that would leave the site open (e.g., for open space, or expansion of City College at a later date).

SEIR or Initial Study Section	Comment
Initial Study	
Section E.1 Land Use and Land Use Planning	The initial study should include an analysis of: • The planning code in relation to the parcel's zoning designation and nonpublic use of the parcel; and • The accuracy of Balboa Park Station Area Plan's program-level significance determinations on components related to or included in the proposed project.
Section E.2 Aesthetics	• Scenic vistas and impacts to the visual character of the existing site and surrounding areas.
Section E.3 Population and Housing	• Evaluate potential design changes that may be necessary to address significant population and housing impacts (e.g., increased density of units, and analysis of existing supporting infrastructure).
Section E.4 Cultural Resources	• AB 52 and SB 18 tribal consultation procedures. Comment provided mitigation measures to avoid or minimize significant adverse impacts to tribal cultural resources, if feasible.
Section E.9 Greenhouse Gas Emissions	• Address maximizing opportunities for electric car charging in parking structures.
Section E.10 Wind	• Impacts to open spaces and Riordan High School Track resulting from wind effects; and • Impacts to Sunnyside resulting from wind effects.
Section E.10 Shadow	• Impacts to open spaces and Riordan High School Track resulting from shadows
Section E.13 Utilities and Service Systems	• Water supplies to serve the project; • The proposed project's construction of new housing and demand in relation to sufficiency of existing or proposed utilities to support the proposed project; and • Address Utilities and Service Systems separate from Public Services.
Section E.14 Public Services	• Address potential impacts to facilities adjacent to, and in surrounding neighborhoods of the project site (e.g., schools and public education services, emergency service response times, and other public facilities); and • Parking loss and potential secondary impacts to City College, increased demand for parking on nearby streets and off-street facilities.
Section E.15 Biological Resources	• Address the potential for the proposed project to cause habitat modifications (e.g., installation of lawn and removal of plants) and pet-wildlife conflicts, and include relevant mitigation measures if significant impacts are found; • Address impacts on existing plants and animals on the project site (e.g., coyote brush, white-crowned sparrow, migratory birds, native plants, and insects); and • Proposed project should build to Standards for Bird-Safe Buildings, as provided by San Francisco Planning Department.
Section E.17 Hydrology and Water Quality	• Impacts to water quality from water supply, emergency water supply, groundwater, and stormwater runoff.
Section E.18 Hazards and Hazardous Materials	• Evaluate the potential impact of herbicide use on groundwater.

1.D.3 Draft SEIR and Initial Study Public Review and Opportunities for Public Participation

The CEQA Guidelines and San Francisco Administrative Code chapter 31 encourage public participation in the planning and environmental review processes. The planning department provides opportunities for the public to present comments and concerns regarding this SEIR and its appendices, including the initial study (SEIR Appendix B), throughout the environmental review process. These opportunities include a public review and comment period and a public hearing on this Draft SEIR and initial study before the San Francisco Planning Commission.

The public review period for the Draft SEIR and initial study is from August 8, 2019, through September 23, 2019. The planning commission will hold a public hearing on the Draft SEIR and initial study during the 45-day public review and comment period to solicit public comment on the information presented in the Draft SEIR and initial study. The public hearing will be held on September 12, 2019, at City Hall, Dr. Carlton B. Goodlett Place, Room 400, San Francisco, California, beginning at **1 p.m. or later** (call 415.588.6422 the week of the hearing for a recorded message giving a more specific time).

The SEIR and all attachments (including the initial study, SEIR Appendix B) are available on the planning department's "Environmental Impact Reports & Negative Declarations" webpage (*https://sfplanning.org/environmental-review-documents*). Compact discs and paper copies are also available at the Planning Information Center counter on the first floor of 1660 Mission Street, San Francisco. Documents referenced in this SEIR are available for review at the Planning Department's office on the fourth floor of 1650 Mission Street in Case File No. 2018-007883ENV (call 415.575.9072), as well as online at www.ab900balboa.com.

Governmental agencies, interested organizations, and other members of the public are invited to submit written comments on the Draft SEIR and initial study during the public review period. Written public comments may be submitted by mail to:

San Francisco Planning Department
Attention: Jeanie Poling, Senior Environmental Planner
1650 Mission Street, Suite 400
San Francisco, CA 94103

or by email to:

CPC.BalboaReservoir@sfgov.org

Members of the public are not required to provide personal identifying information when they communicate with the San Francisco Planning Commission. 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.

1.D.4 Final SEIR and SEIR Certification

Following the close of the public review and comment period, the planning department will prepare and publish a document titled "Responses to Comments on the Draft SEIR." This document will contain copies of all written, email, and recorded oral comments received on the Draft SEIR as well as the planning department's written responses to substantive comments and any necessary revisions to the Draft SEIR. Together, the Draft SEIR and the Responses to Comments document will constitute the Final SEIR. Not less than ten days prior to the San Francisco Planning Commission hearing to consider certification of the Final SEIR, the planning department will issue the Final SEIR to persons commenting on the Draft SEIR and to any board(s), commission(s) or department(s) that will carry out or approve the proposed project. During an advertised public meeting, the planning commission will consider the documents and, if found adequate, will certify the Final SEIR. Certification of the Final SEIR by the commission represents that the document: (1) has been completed in compliance with CEQA; (2) was presented to the San Francisco Planning Commission and the commission reviewed and considered the information contained in the Final SEIR prior to taking an approval action on the proposed project; and (3) reflects the lead agency's independent judgment and analysis.

CEQA requires that agencies shall neither approve nor implement a project unless the project implements all feasible mitigation measures that would reduce significant environmental impacts to a less-than-significant level, essentially avoiding or substantially lessening the potentially significant impacts of the project, except when certain findings are made. If an agency approves a project that would result in the occurrence of significant adverse impact(s) that cannot feasibly be mitigated to less-than-significant levels (that is, significant and unavoidable impacts), the agency must state the reasons for its action in writing, demonstrate that even with implementation of all feasible mitigation, the impact would still exceed significance thresholds based on the SEIR or other information in the record, and adopt a statement of overriding considerations.

At the time of project approval, CEQA and the CEQA Guidelines require lead agencies to adopt a mitigation monitoring or reporting program that it has made a condition of project approval in order to mitigate or avoid significant impacts on the environment (CEQA Guidelines section 21081.6; CEQA Guidelines section 15097). This SEIR identifies and presents the project-specific mitigation and improvement measures that, if the proposed project is approved, would be included in the mitigation monitoring and reporting program for the Balboa Reservoir project as a condition of project approval.

1.D.5 Assembly Bill 900

The project sponsor has filed an application with the Governor's Office of Planning and Research for certification of the proposed project as an environmental leadership development project under the Jobs and Economic Improvement through Environmental Leadership Act of 2011 (Assembly

Bill [AB] 900, as updated to comply with Senate Bill [SB] 734 and AB 246). The application is available online, and was subject to public review from June 25, 2019, through July 28, 2019.[14]

AB 900[15] provides streamlining benefits under CEQA, as described further below, for environmental leadership development projects and defines an environmental leadership development project as the following:

- the project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature;
- the project, upon completion, will qualify for Leadership in Energy and Environmental Design gold certification or better;
- the project will achieve at least 15 percent greater transportation efficiency than comparable projects;
- the project is located on an infill site and in an urbanized area; and
- for projects within a metropolitan planning organization's jurisdiction for which a sustainable communities strategy or alternative planning strategy is in effect, the infill project is consistent with the general use designation, density, building intensity and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the California Air Resources Board has accepted that the strategy would achieve the greenhouse gas (GHG) emission reduction targets.[16]

In order for the Governor to certify a leadership project, the project (or project applicant) must: (1) result in a minimum investment of $100 million dollars in California upon completion of construction; (2) create high-wage, highly skilled jobs that pay prevailing wages and living wages and provide construction jobs and permanent jobs for Californians, and help reduce unemployment; (3) not result in any net additional GHG emissions; (4) comply with requirements for commercial and organic waste recycling; (5) have a binding agreement with the lead agency establishing the mitigation measure and record of proceeding requirements set forth in Public Resources Code sections 21183(e) and (g); and (6) agree to pay the costs of the Court of Appeal in hearing and deciding any case.[17,18] Multifamily residential projects certified as environmental development leadership projects are also required to provide unbundled parking, such that private vehicle parking spaces are priced and rented or purchased separately from dwelling units.

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14 Governor's Office of Planning and Research, California Jobs (AB 900), *Submitted Applications*, *201802028-Balboa Reservoir*, *http://opr.ca.gov/ceqa/california-jobs.html*, accessed July 15, 2019. This document (and all other documents cited in this report, unless otherwise noted) is available for review at 1650 Mission Street, Suite 400, San Francisco, CA, as part of Case No. 2018-007883ENV.

15 California Public Resources Code section 21178 et seq. and Governor's Office of Planning and Research, California Jobs (AB 900), *Governor's Guidelines for Streamlining Judicial Review Under the California Environmental Quality Act Pursuant to AB 900, Updated to Comply with Senate Bill 734 and Assembly Bill 246.* Available online at *http://opr.ca.gov/ceqa/california-jobs.html*, accessed July 22, 2019.

16 California Public Resources Code section 21180(b).

17 California Public Resources Code section 21183.

18 Reservoir Community Partners, LLC, Balboa Reservoir Mixed-Use Project Acknowledgment of Obligations under Public Resources Code Sections 21183(e), (f), and (g), May 1, 2019.

As of the publication of this Draft SEIR the California Air Resources Board has yet to determine if the proposed project would result in any net additional GHG emissions for purposes of certification under AB 900.

In accordance with the requirements of AB 900, the planning department has provided a record of proceedings for the proposed project that can be accessed and downloaded from the following website: www.ab900balboa.com. The record of proceedings includes the SEIR and all other documents and materials submitted to, or relied upon by, the lead agency in the preparation of the SEIR or the approval of the project. In addition, a document prepared by the lead agency or submitted by the applicant after the date of the release of the Draft SEIR that is a part of the record of proceedings, and comments received on the Draft SEIR, will be made available to the public on this same website in a readily accessible electronic format within the timeframes specified by this act. Comments on this Draft SEIR should be emailed to CPC.BalboaReservoir@sfgov.org.

Within 10 days of the governor certifying the proposed project as an environmental leadership development project, the planning department is required to issue a public notice stating that the applicant has elected to proceed under Public Resources Code chapter 6.5 (commencing with section 21178), which provides, among other things, that any judicial action challenging the certification of the SEIR or the approval of the project described in the SEIR is subject to the procedures set forth in Public Resources Code sections 21185 to 21186, inclusive.

As required by Public Resources Code section 21185, the Judicial Council adopted rules of court that establish procedures applicable to actions or proceedings brought to attack, review, set aside, void, or annul the certification of the environmental impact report for an environmental leadership development project (certified by the governor pursuant to this act) or the granting of any project approvals that require the actions or proceedings, including any potential appeals therefrom, be resolved, to the extent feasible within 270 days of the filing of the certified record of proceedings with the court. This creates an accelerated timeframe for CEQA litigation. The procedures can be found in California Rules of Court rules 3.2220 to 3.2231.

The provisions of AB 900 apply to projects that have been certified by the governor as environmental leadership development projects by January 1, 2020. This act remains in effect until January 1, 2021.

1.E Contents and Organization of This SEIR

Consistent with CEQA Guidelines sections 15120 to 15132, this SEIR describes the proposed project, required approvals, and existing land use plans and policies applicable to the proposed project; identifies potential environmental impacts of the proposed project, mitigation measures where those impacts are significant, and cumulative adverse impacts to which the proposed project could make a substantial contribution; discusses growth-inducing and significant unavoidable effects of the project; and evaluates alternatives to the project that could avoid or reduce significant impacts while still meeting most of the project's objectives.

This SEIR is organized as follows:

- **Chapter S, Summary.** This chapter summarizes the contents of the SEIR, including an overview of the project description and, in a tabular format, a summary of the environmental impacts that would result from project implementation and the mitigation measures identified to reduce or avoid significant impacts. It also briefly describes the project variant and its impacts, and the alternatives to the proposed project.
- **Chapter 1, Introduction.** This chapter describes the environmental review process, the previous environmental review of the area plan, the public and agency comments received on the scope of the SEIR, and the organization of the SEIR.
- **Chapter 2, Project Description.** This chapter discusses the project's background, objectives, and location; describes the physical characteristics of the project, including both the construction and operational phases; and identifies required project approvals.
- **Chapter 3, Environmental Setting, Impacts and Mitigation Measures.** This chapter describes the project's existing setting and environmental impacts with respect to transportation and circulation, noise and vibration, and air quality. Each environmental topic is discussed in a separate section within this chapter, and each section identifies the thresholds of significance used to assess the severity of the impacts. Within each section, there is a summary of the relevant sections of the PEIR, descriptions of the setting and regulatory framework, and impact analyses of both project-specific and cumulative impacts of the proposed project and a determination of the significance of each impact. For impacts determined to be significant, mitigation measures that would reduce or avoid those impacts are presented.
- **Chapter 4, Other CEQA Issues.** Pursuant to CEQA Guidelines section 15126.2, this chapter summarizes any growth-inducing impacts that could result from the proposed project, irreversible changes to the environment, and significant and unavoidable environmental impacts. This chapter presents areas of controversy to be resolved.
- **Chapter 5, Variants.** This chapter describes and analyzes variants to the proposed project.
- **Chapter 6, Alternatives.** This chapter presents and evaluates alternatives to the proposed project that could feasibly attain most of the project's objectives as well as reduce identified significant adverse impacts of the project. It also identifies the environmentally superior alternative and describes other alternatives that were considered but rejected. Alternatives evaluated in this chapter include the following:
  - Alternative A: No Project
  - Alternative B: Reduced Density
  - Alternative C: San Ramon Way Passenger Vehicle Access
  - Alternative D: Six-Year Construction Schedule
- **Chapter 7, Report Preparers.** This chapter identifies the SEIR authors and consultants; project sponsor and consultants; and agencies and persons consulted.
- **Appendices.** The appendices include the NOP, the initial study, and supporting technical information for the SEIR. The following appendices are included in this SEIR:
  - Appendix A: Notice of Preparation
  - Appendix B: Initial Study (includes analysis of: land use and land use planning; population and housing; cultural resources; tribal cultural resources; greenhouse gas emissions; wind; shadow; recreation; utilities and service systems; public services; biological resources;

geology and soils; hydrology and water quality; hazards and hazardous materials; mineral resources; energy; agriculture and forestry resources; and wildfire)

- Appendix C: Transportation Supporting Information
  - Appendix C1: Travel Demand Memorandum
  - Appendix C2: Transit Assessment Memorandum
- Appendix D: Noise Supporting Information
  - Appendix D1: Construction Noise Model Output
  - Appendix D2: Traffic Noise Model Output
  - Appendix D3: Calculations of Long-Term Noise Metrics
  - Appendix D4: Sound Level Meter Reports
- Appendix E: Air Quality Technical Memorandum
- Appendix F: Water Supply Assessment
- Appendix G: Biological Resources Supporting Information
- Appendix H: Balboa Park Station Area Plan PEIR Mitigation Measures

CHAPTER 2
Project Description

2.A Project Overview

The proposed Balboa Reservoir Project is located on a 17.6-acre site in the West of Twin Peaks area of south central San Francisco (see **Figure 2-1, Location Map**). The site is north of the Ocean Avenue commercial district, west of the City College of San Francisco Ocean Campus, east of the Westwood Park neighborhood, and south of Archbishop Riordan High School. The project site is owned by the City and County of San Francisco (City) under the jurisdiction of the San Francisco Public Utilities Commission (SFPUC). The City, acting by and through the SFPUC, selected Reservoir Community Partners LLC (a joint venture between BRIDGE Housing Corporation [a nonprofit affordable housing developer] and Avalon Bay Communities) to act as master developer for the project site.[19] The proposed project would develop the site with mixed-income housing, open space, a childcare facility/community room available for public use, retail space, on- and off-street parking, and new streets, utilities, and other infrastructure. This subsequent environmental impact report (SEIR) will analyze two different sets of options for the site's residential density to capture a range of possible development on the project site: The first is the Developer's Proposed Option (1,100 dwelling units), proposed by Reservoir Community Partners LLC. The second is the Additional Housing Option (1,550 dwelling units), developed by the City to fulfill the objectives of the San Francisco General Plan (the general plan) to maximize affordable housing and housing in transit-rich neighborhoods. Development under each of the two options would entail the same land uses and street configurations, and similar site plans.

Under each option, the proposed project would amend the general plan and the San Francisco Planning Code, and would create a new Balboa Reservoir Special Use District (SUD). The special use district would establish land use zoning controls and incorporate design standards and guidelines for the site. The San Francisco Zoning Map would be amended to show changes from the current zoning (P [Public]) to the proposed zoning and would modify the existing height limits of 40 to 65 feet to heights of up to 78 feet in the Developer's Proposed Option and up to 88 feet in the Additional Housing Option.

[19] The build-out of the development would involve additional partner firms, including nonprofits Mission Housing Development Corporation and Habitat for Humanity of Greater San Francisco, along with Pacific Union Development Company.

SOURCE: Google Earth, 2018; ESA, 2018

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 2-1
Location Map

Overall, the proposed project would construct up to approximately 1.8 million gross square feet (gsf) of uses, including between approximately 1.3 and 1.5 million gsf of residential space (1,100 to 1,550 dwelling units plus residential amenities), approximately 10,000 gsf of community space (childcare and a community room for public use), approximately 7,500 gsf of retail, up to 550 residential parking spaces and 750 public parking spaces in the Developer's Proposed Option, and up to 650 residential parking spaces (with no public parking spaces) in the Additional Housing Option.[20] The buildings would range in height from 25 to 78 feet in the Developer's Proposed Option and from 25 to 88 feet in the Additional Housing Option. Approximately 4 acres would be devoted to publicly accessible open space under each option. Also under each option, the SFPUC would retain ownership of an 80-foot-wide strip of land located along the southern edge of the site where an underground water transmission pipeline is located.

The proposed project (both options) would include transportation and circulation changes, including the extension of existing north–south Lee Avenue across the site, and a new internal street network. The project would include a roadway network that would be accessible for people walking, including people with disabilities, bicycling, and driving. The project would also include new utility infrastructure to supply the site with potable water, wastewater collection, stormwater collection and treatment, electricity, natural gas, and communications.

The proposed project also includes four variants that consider modifications to a limited feature or aspect of the project (e.g., street and garage configurations). Each of the variants are described and analyzed in SEIR Chapter 5, Variants. A brief description is provided under SEIR Section 2.F, Project Variants, p. 2-38.

Construction of the proposed project is anticipated to occur in three main phases over the course of six years, from 2021 to approximately 2027. The initial phase (Phase 0) would include grading, excavation, and construction of site infrastructure over 12 months. During the initial portion of Phase 0, the site may not be available for public parking due to mass grading activities. Two phases of vertical construction would follow, each lasting approximately 24 to 30 months. During construction of Phase 1, unused portions of the site would be paved to allow surface vehicular parking until Phase 2 construction begins. During construction of Phase 2 and operation of Phase 1, some surface vehicular parking areas would be available along streets constructed during Phase 1; however, the public parking garage would not be yet available, as it would be under construction during Phase 2. Public parking would be accommodated in the public parking garage (under the Developer's Proposed Option), when it is completed.

[20] *Gross square feet* includes residential circulation and common area, and it is different from the planning code definition.

2.B Project Objectives

2.B.1 Project Objectives

The City and County of San Francisco and the SFPUC, as the current owner of the project site, and Reservoir Community Partners LLC, the project sponsor, seek to fulfill the following shared objectives associated with the Balboa Reservoir project:

- Implement the goals of the City's 2014 Public Land for Housing program and the Surplus Public Lands Initiative (Proposition K), passed by the voters in November 2015, by replacing an underused surface parking lot located on surplus public land with a substantial amount of new housing, including a high percentage of affordable housing.
- Implement the objectives and goals of the General Plan Housing Element and of the 2009 Balboa Park Station Area Plan that calls for the development of a mixed-use residential neighborhood on the west reservoir to address the citywide demand for housing.
- Contribute to the City's goal of creating 5,000 housing units each year on a site specifically identified in the general plan for additional housing in close proximity to local and regional public transportation by maximizing the number of housing units in the project.
- Build a high-quality residential community with a wide range of building types and heights, and a range of dwelling unit type and tenure, which will provide new residents with the greatest variety of housing options.
- Build a mixed-income community with a high percentage of affordable units to provide housing options for households at a range of income levels, and by doing so facilitate a neighborhood that fosters personal connections across income ranges.
- Replace the reservoir's abandoned infrastructure with new infrastructure improvements, including new streets and sidewalks, bicycle and pedestrian amenities, pedestrian paseos and multiuse paths, water, sewer and gas/electric utilities, new fire hydrant infrastructure and an extension of the City's Auxiliary Water Supply System (AWSS), and community facilities including one new public park, another major open space, a community center, and a childcare facility.
- Establish pedestrian and bicycle connections from the project site to adjacent neighborhoods including City College of San Francisco, Ocean Avenue, Sunnyside and Westwood Park, and increase and improve pedestrian access to transit connections in the area including Bay Area Rapid Transit (BART), Municipal Railway (Muni) light-rail and bus lines, and Muni's City College Terminal.[21]
- As stated in the City's Balboa Reservoir Request for Proposals, work with City College to address parking needs by identifying substitute parking and transportation solutions.
- Develop a project that is financially feasible and able to support the financial investment that will be required to realize it, including equity and debt return levels that will be required by investors and lenders to finance residential developments, as well as eligibility for required federal, state, regional, and local sources of subsidy for infrastructure and utility construction and affordable housing.

[21] The City College Terminal was formerly known as the Phelan Loop.

The City and SFPUC have the following additional objective:

- Provide SFPUC's water utility ratepayers with fair market value for this utility land asset as required by the city's charter and applicable law.

2.C Background

SEIR Chapter 1, Introduction, presents a detailed discussion of the area plan approval process, prior environmental review of the area plan, and the relationship of this SEIR to the Balboa Park Station Area Plan [Program] Environmental Impact Report (area plan PEIR, or PEIR). The following provides a description of the project site development background.

2.C.1 Public Lands for Housing and Proposition K

The City established a Public Land for Housing program in 2014 (formerly the Public Sites Program), wherein City agencies examined underutilized City-owned sites for housing potential. The interagency committee site selection process was informed by the general plan, Planning Code section 101.1(b), the Surplus City Property Ordinance (San Francisco Administrative Code chapter 23A), San Francisco Charter section 8A.115 (the Transit First Policy), the San Francisco Health Care Services Master Plan, San Francisco Municipal Transportation Agency's (SFMTA's) Real Estate & Facilities Vision for the 21st Century, the SFPUC Land Use Framework, and the City & County of San Francisco Consolidated Plan. In 2014, the City, in coordination with a robust public outreach process, selected the Balboa Reservoir as the first site identified for housing through this process.

In April 2015, the San Francisco Board of Supervisors established the Balboa Reservoir Community Advisory Committee to solicit public input for the site. Between August 2015 and September 2016, the Balboa Reservoir Community Advisory Committee and the City developed the Balboa Reservoir Development Principles & Parameters. The principles and parameters guided the selection process of a developer partner to finance and construct a residential development at the site.

In November 2015, the San Francisco electorate approved Proposition K. The ballot measure expanded allowable uses of surplus public land to include affordable housing. Under Proposition K, surplus property developments with 200 or more units would allow mixed-income projects and would also require at least 33 percent of the housing in each such development to be made permanently affordable to low- and moderate-income households.

2.C.2 Competitive Solicitation and Exclusive Negotiation Agreement

In November 2016, the City, through the SFPUC, issued a request for qualifications to initiate a developer solicitation and selection process. Out of nine request for qualifications respondents, the City identified three development teams most qualified to develop the project site. In March 2017 the City invited these development teams to submit comprehensive proposals in response to a request for proposals. The request for proposals panel selected Reservoir Community Partners LLC, and in August 2017 recommended its selection to the SFPUC general manager.

The City and Reservoir Community Partners LLC entered into an exclusive negotiating agreement, as authorized by SFPUC Commission resolution no. 17-0225 in November 2017. In April 2018, the San Francisco Board of Supervisors adopted resolution no. 85-18, finding the proposed development of the Balboa Reservoir site to be fiscally feasible under San Francisco Administrative Code chapter 29. This resolution authorized the filing of the environmental application and the San Francisco Planning Department to undertake environmental review as required by San Francisco Administrative Code chapter 31 and the California Environmental Quality Act (CEQA).

2.D Project Setting

2.D.1 Balboa Park Station Area Plan

The City adopted the area plan into the general plan in May 2009. The Balboa Reservoir project site comprises the central portion of the plan area, as shown in Figure 2-1, p. 2-2. The 210-acre plan area is generally bounded by parcels along the northern edge of Ocean Avenue, the southern boundary of Archbishop Riordan High School, Judson Avenue and Havelock Street to the north; the northeastern edge of City College, and San Jose and Delano avenues to the east; Niagara and Mount Vernon avenues, and parcels along the southern edges of Geneva and Ocean avenues to the south; and Manor Drive to the west.

The area plan's objectives and policies were developed to implement a set of land use and zoning controls; urban design and architectural guidelines; and transportation/infrastructure, streetscape, and open space improvements that would enhance the overall urban environment and encourage new development, particularly housing and neighborhood-serving commercial uses.[22] The area plan PEIR estimated that implementation of the area plan would result in a net increase of 1,780 residential units and 104,620 net new gsf of commercial development in the plan area by 2025.[23] As of September 2018, 273 dwelling units and 40,904 gsf of commercial uses have been built in the plan area. Excluding the proposed Balboa Reservoir project, an additional 209 dwelling units and 10,995 gsf of commercial uses are under construction or review in the plan area.[24]

The project site is the western portion of the larger Balboa Reservoir basin. The area plan includes policies to develop the east basin with classroom, administrative, a performing arts center, and other uses in accordance with City College's master plan; and policies to develop the west basin (the project site) with residential and open space uses, and to prioritize affordable housing.[25]

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22 City and County of San Francisco, *Balboa Park Station Area Plan Final Environmental Impact Report*, December 4, 2008.
23 City and County of San Francisco, *Balboa Park Station Area Plan Final Environmental Impact Report*, December 4, 2008.
24 San Francisco Planning Department, *Development Status of Balboa Park Area Plan Land Use Program – Updated May 2019*, May, 2019.
25 In 2010, the east basin, also known as the "upper basin," was filled and its grade raised to match surrounding terrain to the east.

2.D.2 Project Site

The project site is a 17.6-acre rectangular parcel and encompasses Assessor's Block 3180/Lot 190. As shown in **Figure 2-2, Project Site and Adjacent Uses**, the site is bounded by City College to the east, Archbishop Riordan High School to the north, the Westwood Park neighborhood to the west, and mixed-use multifamily residential development along Ocean Avenue to the south. The site is less than 0.25 mile north of Ocean Avenue, the primary retail corridor in the Ingleside-Westwood Park neighborhood.

Balboa Reservoir Background

The project site is the western portion of a once-larger 28-acre Balboa Reservoir site. In 1957, the San Francisco Water Department (now the SFPUC) began excavation with water storage in mind, creating north and south basins separated by an east–west berm. The SFPUC never filled or used the basins for water storage. In 2011–2012, a series of land transfers between various public agencies resulted in the reconfiguration of the SFPUC's original Balboa Reservoir land holdings. The City removed the east–west berm and reconfigured the 28-acre property into western and eastern portions. City College now owns the 10.4-acre east basin, and the City, through the SFPUC, owns the 17.6-acre west basin (the project site). City College filled and developed the east basin in 2010 with a surface parking lot and its four-story Multi-Use Building.

Existing Uses

The project site is bounded on three sides by sloping western, northern, and eastern edges that surround a sunken paved surface at the center. It is bounded on the southern side by mixed-use development along Ocean Avenue. An approximately 30-foot-tall earthen berm is located at the western edge of the property. The asphalt-paved surface is relatively level with a slope of 0 to 5 percent, sloping gently up from west to east. There is an approximately 18- and 30-foot increase in elevation between the project site bottom and the top of the eastern and northern slopes, respectively. Along the southern boundary of the site is an 80-foot-wide section of the parcel where a high-pressure underground pipeline maintained by the SFPUC is located (SFPUC right-of-way). The pipeline runs east–west and delivers water across San Francisco. Uses within the right-of-way are subject to SFPUC standards and regulations, which prohibit the placement of permanent structures above water and wastewater assets (such as pipelines). These regulations are considered in the proposed project configuration and further described in Section 2.E.8, Transportation and Circulation Plan.

The site does not contain any permanent structures and currently contains 1,007 surface vehicular parking spaces. The lot provides overflow vehicular parking for City College students, faculty, and staff.[26] A cargo storage container is located on the west side of the site, at the foot of the berm slope. The parking lot is entirely paved with no vegetation. The western and northern slopes contain scattered trees and shrubs, with paved pathways along the tops of these slopes. Paved walkways, stairs, vegetation, and lighting are located on the eastern slope, providing pedestrian connections between the project site and adjacent City College property containing parking and the Multi-Use Building.

[26] City College uses the site under a revocable license granted by the SFPUC.

SOURCE: Google Earth, 2018; ESA, 2018

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Figure 2-2
Project Site and Adjacent Uses

Direct vehicular access into and out of the site is provided along the north side of the east basin by an east–west access road immediately south of Archbishop Riordan High School, and accessed from Frida Kahlo Way (formerly Phelan Avenue).

2.D.3 Zoning and Land Use Designations

Zoning

The project site is within a P (Public) Use District and located in 40-X and 65-A Height and Bulk Districts (see **Figure 2-3, Existing Zoning on Project Site**). The project site is within the central portion of the Balboa Park Station Plan Area (see Figure 2-1, p. 2-2). The City adopted the area plan in 2009, but the City did not rezone the site as part of plan adoption.

General Plan Land Use Designation

The project site is currently designated P (Public Use) in the Balboa Park Station Area Plan of the general plan.

2.D.4 Existing Streets and Public Transit

Major roadways in the project vicinity include Ocean Avenue, a major east–west roadway, approximately 0.1 mile to the south, Frida Kahlo Way, a north–south roadway 0.1 mile to the east, and the north-south-running I-280 freeway, located about 0.3 mile to the east. The site is less than 0.1 mile from a number of Muni stops at Ocean and Lee avenues, including the KT Ingleside/ Third Street Muni line, and the 29 Sunset, along with overnight service on the 91 Third Street and K Owl. The site is less than 0.2 mile away from the Muni stops at City College Terminal, including the 8 Bayshore, 8BX Bayshore Express, and 49 Van Ness/Mission. The site is also approximately 0.5 mile from the Balboa Park BART Station with its East Bay and Peninsula lines and which also has stops for the KT-Ingleside/Third Street, K Owl, J and M light rail lines, along with bus routes 43 Masonic, 54 Felton, 88 BART Shuttle, 8 Bayshore, 8BX Bayshore, 49 Van Ness/Mission, and 91 Third Street.

2.D.5 Adjacent Uses

Land uses immediately surrounding the project site consist primarily of mixed-use commercial and residential buildings, high school buildings and athletic fields, surface parking lots, City College's four-story Multi-Use Building, and single- and two-story single-family housing (see Figure 2-2, p. 2-8).

SOURCE: Van Meter Williams Pollack LLP, 2018; ESA, 2018

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Figure 2-3
Existing Zoning on Project Site

City College of San Francisco Ocean Campus

The 67.4-acre City College Ocean Campus is to the east and includes academic and support buildings, commons, open spaces, walkways and roads, and parking facilities. City College is a public, two-year community college that serves approximately 70,000 students each year at its Ocean Campus, eight centers, and various other instructional sites throughout San Francisco. The Ocean Campus serves approximately 60 percent of City College's total full time equivalent students, with the remaining balance served at the other centers.[27] City College's Ocean Campus contains approximately 732,600 square feet of existing building space that includes classrooms, labs, offices, library, study space, and other support spaces (e.g., gym, food service, and health service).[28]

The campus is roughly bounded by the project site to the west, Archbishop Riordan High School and Judson Avenue to the north, Ocean Avenue to the south, and I-280 to the east. The western-most area of the Ocean Campus, which comprises the eastern portion of the Balboa Reservoir, contains approximately 1,167-space surface vehicle parking spaces for students, faculty, and staff, and the Multi-Use Building. The Multi-Use Building is located on the southeast portion of the east basin and includes academic counseling services, health education, and other outreach and resource centers.

Archbishop Riordan High School

Directly north of the project site is the approximately 9.4-acre Archbishop Riordan High School campus, a private Catholic all-male high school that opened in 1949. The campus is bounded by Judson Avenue to the north, Frida Kahlo Way to the east, Westwood Park to the west, and the east–west access road to the proposed project site to the south. The high school has a student population of approximately 680 day and boarding students. The school's campus contains two- and three-story buildings, athletic fields, and a parking lot.

Westwood Park

The Westwood Park residential neighborhood is to the west of the project site and includes approximately 650 one- to two-story bungalow-style homes, generally dating from the 1920s. The neighborhood's systematic street layout generally contains curved roads that form larger ovals within the neighborhood. Miramar Avenue bisects the Westwood Park neighborhood, connecting Ocean Avenue from the south to Monterey Boulevard from the north.

Ocean Avenue Development

Directly south of the project site are three multifamily mixed-use commercial and residential buildings, each with neighborhood-serving retail uses at the ground floor and four stories of

[27] City College of San Francisco, *Facilities Master Plan Final Draft*, March 18, 2019, *https://www.ccsf.edu/en/about-city-college/administration/vcfa/facilities_planning/facilities-master-plan.html*, accessed June 7, 2019. The master plan was adopted at the City College Board of Trustees meeting on March 21, 2019.

[28] City College of San Francisco, CCSF Facilities Master Plan Board of Trustees Update, April 27, 2017, *https://www.ccsf.edu/dam/Organizational_Assets/About_CCSF/Admin/facilities_planning/2017FMP/20170427FMPUpdateBoT/2017.0427_IV.%20A%20FMP%20Update.pdf*, accessed October 15, 2018.

residential units above. The building at 1100 Ocean Avenue is bounded by Lee Avenue to the west, Ocean Avenue to the south, San Francisco Fire Department Station 15 to the east, and Balboa Reservoir to the north. This site is a mixed-use development with residential above ground floor retail and public open space (Unity Plaza). The two buildings at 1150–2000 Ocean Avenue are bounded by Ingleside Branch Library and courtyard (under the SFPUC's jurisdiction) to the west, Ocean Avenue to the south, Lee Avenue to the east, and the Balboa Reservoir to the north. This site is a mixed-use development with residential above ground floor retail.

Other Uses

The Ingleside Branch of the San Francisco Public Library is located on Ocean Avenue less than 100 feet from the project's southwestern border. The library has an outdoor courtyard and garden (under the SFPUC's jurisdiction) that is open to the public during library hours, and includes seating areas, a play-to-learn area for children, fencing, gates, and landscaping. Unity Plaza, located at the corner of Ocean Avenue and City College Terminal, approximately 200 feet from the project site's southeastern border, is a landscaped, publicly accessible open space with benches, pedestrian lighting, artistic pavement, a domed play structure, and photography displays depicting the history of the area. The space serves as a pedestrian link between Muni's KT-Ingleside/Third Street stop on Ocean Avenue, the City College campus, and the City College Terminal Muni bus terminal. San Francisco Fire Department Station 15 is located on the corner of Ocean Avenue and Frida Kahlo Way approximately 500 feet from the project site's southeastern border.

2.E Project Characteristics

The proposed project would rezone the site and establish development controls for the development of mixed-income housing, open space, community facilities, small retail, parking, streets, and other infrastructure. The project would include amendments to the general plan and the planning code, and would create a new Balboa Reservoir SUD. The special use district would establish land use zoning controls and incorporate design standards and guidelines for the site. The Zoning Map would be amended to show changes from the current use district (P [Public]) to the proposed special use district. The existing height limits of 40 to 65 feet would be modified to varying heights up to 78 feet in the Developer's Proposed Option and up to 88 feet in the Additional Housing Option, as measured by the planning code. (The planning code permits minor rooftop appurtenances, such as elevator and stair penthouses to exceed height limits.) The proposed project would include new publicly accessible open space, transportation and circulation changes, and new utilities and other infrastructure. Transportation and circulation changes would include the extension of the existing north–south Lee Avenue across the site and a new internal street network. The project would include a roadway network to be accessible for people walking, including people with disabilities, bicycling, and driving.

This SEIR, including the initial study, analyzes two different options for the site's residential density to capture a range of possible development on the project site. The two options are the Developer's Proposed Option of 1,100 dwelling units, and the Additional Housing Option of

1,550.[29] Overall, the proposed project would construct up to approximately 1.6 million gsf of development in the Developer's Proposed Option, or 1.8 million gsf of development in the Additional Housing Option. The Developer's Proposed Option includes a 750-space public parking garage, and the Additional Housing Option does not include a public parking garage.

Development under each of the project options would entail the same land uses and street configurations, and similar site plans. Both project options could include approximately 7,500 gsf of retail space such as a café provided on the ground level of Block[30] A, C, D, E, or F to help activate the approximately 2-acre central park open space area. Under both options, the ground floor of Block B would contain approximately 10,000 gsf of childcare and community space. Additional information on the project options is provided below.

Table 2-1, Balboa Reservoir Project Characteristics, summarizes the project characteristics of the two proposed project options, including the types and amounts of land uses, proposed dwelling units, building heights, vehicle and bicycle parking, and other features. In this SEIR, the term "proposed project" is used when project features of the Developer's Proposed Option and the Additional Housing Option would be the same.

2.E.1 Developer's Proposed Option

The Developer's Proposed Option would include up to 1.64 million gsf in new construction on 10 Blocks (**Figure 2-4, Developer's Proposed Option Site Plan and Height Ranges**). Construction under this option would provide 1,100 residential units totaling about 1.3 million gsf. Housing would be provided on each block. A total of up to 50 percent of the new units would be designated affordable to persons earning between 55 and 120 percent of the area median income, depending on market surveys, funding source restrictions and other stakeholder input on the affordable housing plan. Affordable housing would be distributed throughout the site. For purposes of this SEIR, the unit mix is assumed to be 40 percent studio/one bedroom units and 60 percent two-or-more-bedroom units. **Figure 2-5, Ground Floor Use Plan for Developer's Proposed Option**, presents the proposed ground floor use plan at the project site. With the exception of the townhome blocks (Blocks TH1 and TH2), the ground floor areas on all blocks could include common spaces, building lobbies, residential units, as well as utility and parking access. As shown in Figure 2-5, the ground floor of Block B would contain approximately 10,000 gsf of childcare and community space. Approximately 7,500 gsf of retail space, including a café, could be provided on the ground level of Block A, C, D, E, or F.

[29] In an effort to fulfill general plan objectives to maximize affordable housing and housing in transit-rich neighborhoods, the City developed a policy assumption consisting of 1,550 dwelling units (the Additional Housing Option) that envisions more housing for all incomes than the Developer's Proposed Option.

[30] For purposes of this SEIR, "Blocks" represent areas proposed for individual buildings or a group of townhomes (e.g., TH1).

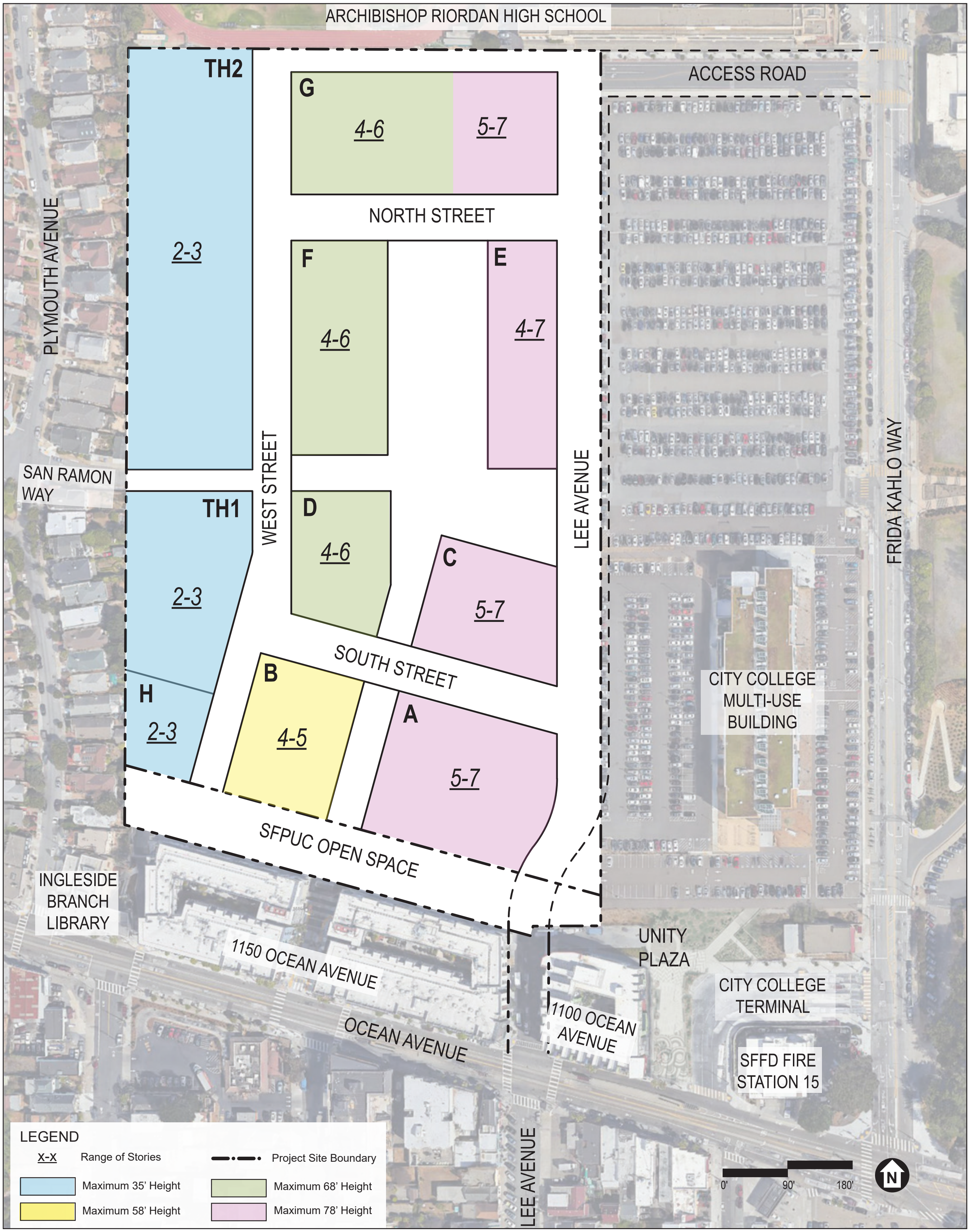
TABLE 2-1
BALBOA RESERVOIR PROJECT CHARACTERISTICS

Project Characteristic	Developer's Proposed Option		Additional Housing Option	
	Metric			
Proposed Land Use Program	**Area (gross square feet)**		**Area (gross square feet)**	
Residential	1,283,000		1,588,000	
Commercial (retail)	7,500		7,500	
Community facilities (childcare and community room for public use)	10,000		10,000	
Parking	339,900 (residential and public)		231,000 (residential only)	
Total Building Area	**1,640,400**		**1,836,500**	
Proposed Dwelling Units	**Number**	**Percentage (approximate)**	**Number**	**Percentage (approximate)**
Studio and 1-bedroom	440	40%	620	40%
2- and 3-bedroom	660	60%	930	60%
Total Dwelling Units	**1,100**	**100%**	**1,550**	**100%**
Proposed Parking	**Number**		**Number**	
Vehicle Parking Spaces Car share spaces	**1,300 [550 residential + 750 public garage]** 7 minimum		**650 [residential only]** 12 minimum	
Bicycle parking[a] Bicycle parking class 1	936		1,100	
Bicycle parking class 2	75		80	
Total Bicycle Parking	**1,011**		**1,180**	
Open Space	**Area (gross square feet)**		**Area (gross square feet)**	
Publicly accessible open space	174,240		174,240	
Private open space	36 square feet per unit if located on balcony, or 48 square feet per unit if commonly accessible to residents			
Building Characteristics				
Stories	2 to 7 stories		2 to 8 stories	
Height	25 to 78 feet		25 to 88 feet	
Ground floor	Blocks A through H could include residential units, lobbies, retail, and common space. Block B would include childcare and community space.		Blocks A through J could include residential units, lobbies, retail, and common space. Block B would include childcare and community space.	
Basements	Blocks A through H would allow but not require one below-grade level of vehicle parking spaces.		Blocks A through J would allow but not require one below-grade level of vehicle parking spaces.	

SOURCES: Reservoir Community Partners LLC, 2018; San Francisco Planning Department, 2018.

NOTE:

a Planning Code section 155.1(a) 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."



SOURCE: : Van Meter Williams Pollack LLP, 2019

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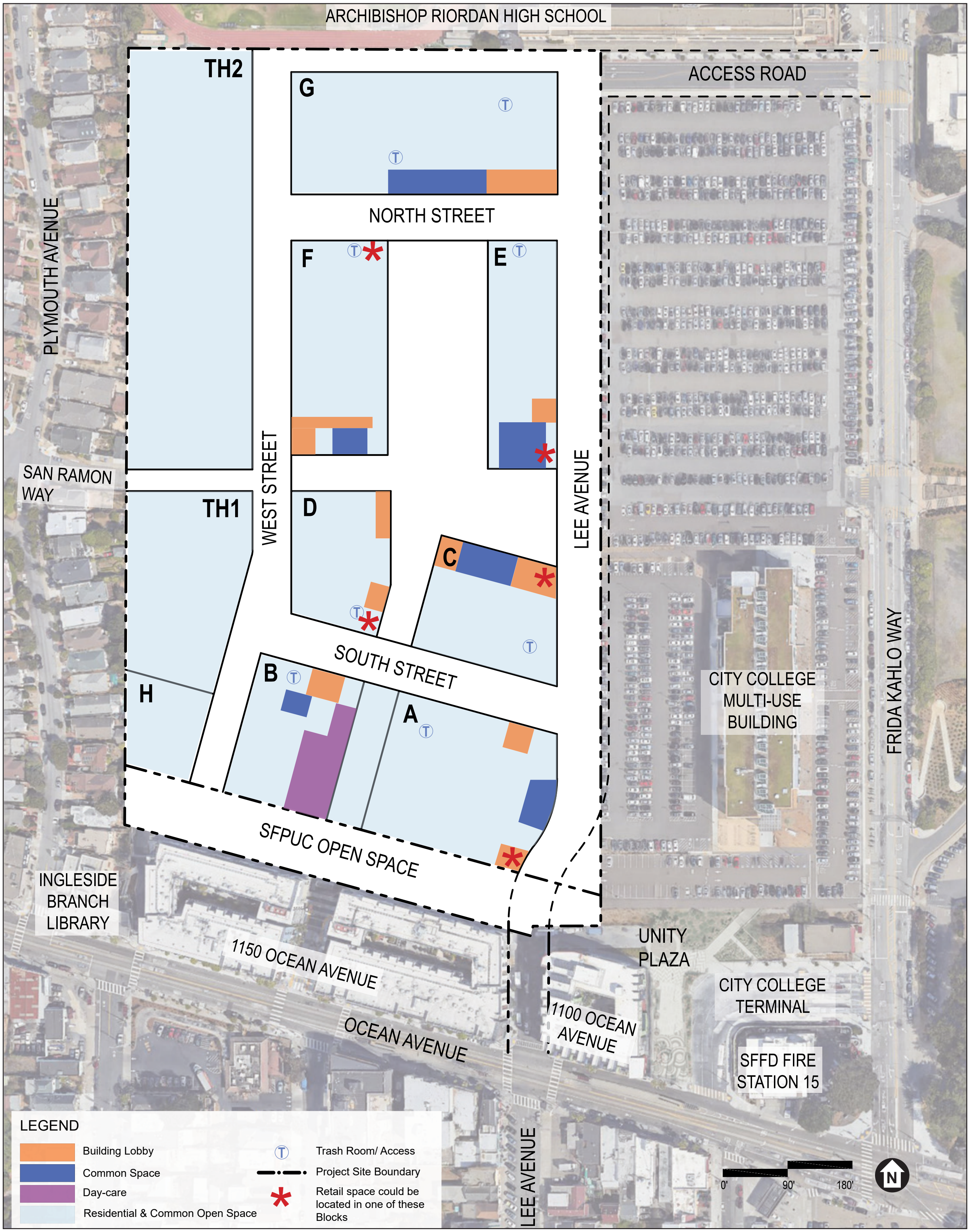
Figure 2-4
Developer's Proposed Option Site Plan and Height Ranges



SOURCE: : Van Meter Williams Pollack LLP, 2019

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Figure 2-5
Ground Floor Use Plan for Developer's Proposed Option

2.E.2 Additional Housing Option

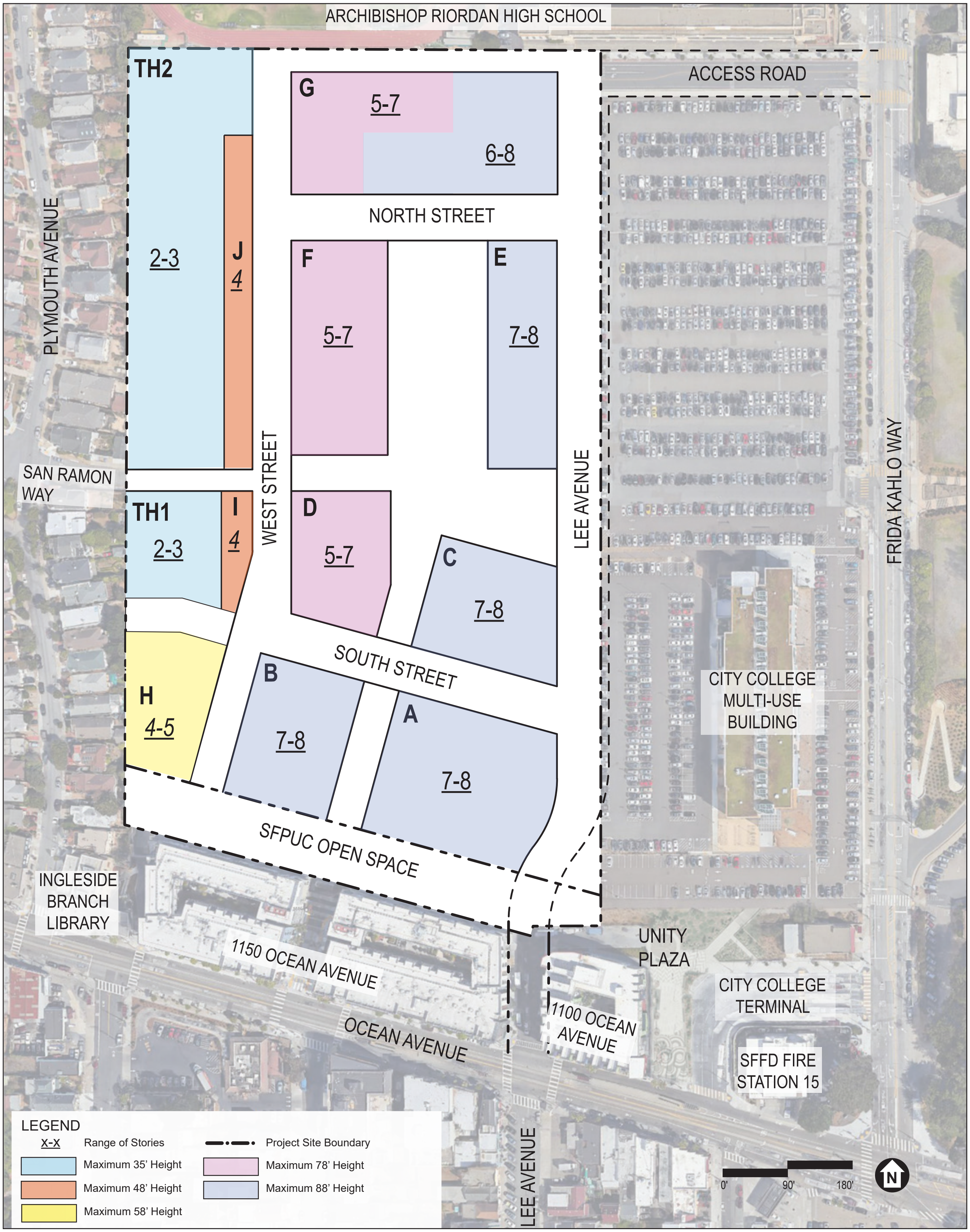
Development under the Additional Housing Option would include up to 1.8 million gsf in new construction on 12 blocks (**Figure 2-6, Additional Housing Option Site Plan and Height Ranges**). Construction under this assumption would provide 1,550 residential units totaling about 1.5 million gsf on all 12 blocks. Under this option and as shown in Figure 2-6, four-story stacked townhomes are proposed on Blocks I and J, which would be one story taller than the Developer's Proposed Option for the same area. Under the Additional Housing Option, a four- to five-story residential building is proposed on Block H. With the exception of the townhome blocks (Blocks TH1, TH2, I, and J), the ground floor areas on all blocks could include residential units, common spaces, and building lobbies, as well as utility and parking access. For purposes of this SEIR, the unit mix is assumed to be 40 percent studio/one bedroom units and 60 percent two-or-more-bedroom units. **Figure 2-7, Ground Floor Use Plan for Additional Housing Option**, presents the proposed ground floor use plan for this option.

2.E.3 Building Heights

Figure 2-4 and Figure 2-6 present the proposed height limits for the Developer's Proposed and Additional Housing Options, respectively. The proposed project would include amendments to the Zoning Map to modify the existing height limits to up to 78 feet in the Developer's Proposed Option and to up to 88 feet in the Additional Housing Option. As shown in Figure 2-4 and Figure 2-6, the proposed height limits for both options would generally step up from west to east across the project site, with lower permitted heights being adjacent to the Westwood Park neighborhood and greater permitted heights nearer to Lee Avenue, City College, and the existing multistory development along Ocean Avenue. In general, most buildings under the Additional Housing Option would be one story taller than the Developer's Proposed Option. The maximum building heights for the Developer's Proposed Option would generally be 25 to 78 feet, and the maximum building heights for the Additional Housing Option would generally be 25 to 88 feet. **Figure 2-8, Site Sections**, is a representative north–south and east–west illustration of the site for both project options.

2.E.4 Design Standards and Guidelines

As part of the proposed special use district, the planning department would adopt design standards and guidelines for building design, streets and circulation, utilities and infrastructure, open space, and the public realm. Standards would be measurable and include quantitative design specifications that developers would have to meet. Guidelines would be qualitative that the developers would be required to follow to the maximum extent possible. The design standards and guidelines would establish controls for bulk restriction, articulation and modulation, building materials and treatment, building frontage utilization, setbacks, design parameters for open space, streets, and parking and loading standards. Certain architecture requirements would apply to the entire project site and others would be block-specific. The design standards and guidelines would require street trees to be planted in appropriate locations to create new landscape compatible with the proposed project. The proposed planning code amendments included in the special use district and the design standards and guidelines would together guide and control all development at the project site after the project obtains entitlements.



SOURCE: San Francisco Planning Department, 2019

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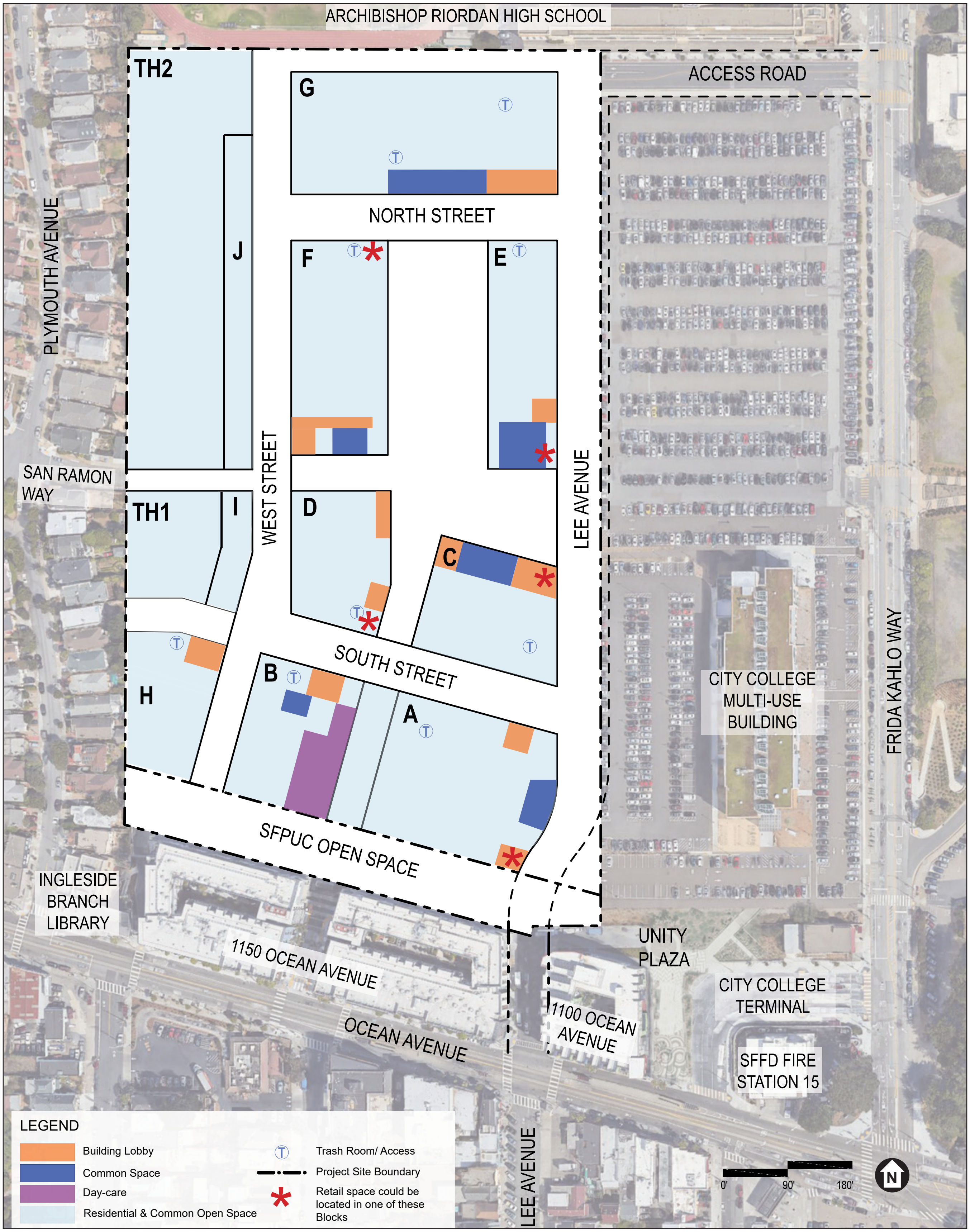
Figure 2-6
Additional Housing Option Site Plan and Height Ranges



SOURCE: San Francisco Planning Department, 2019

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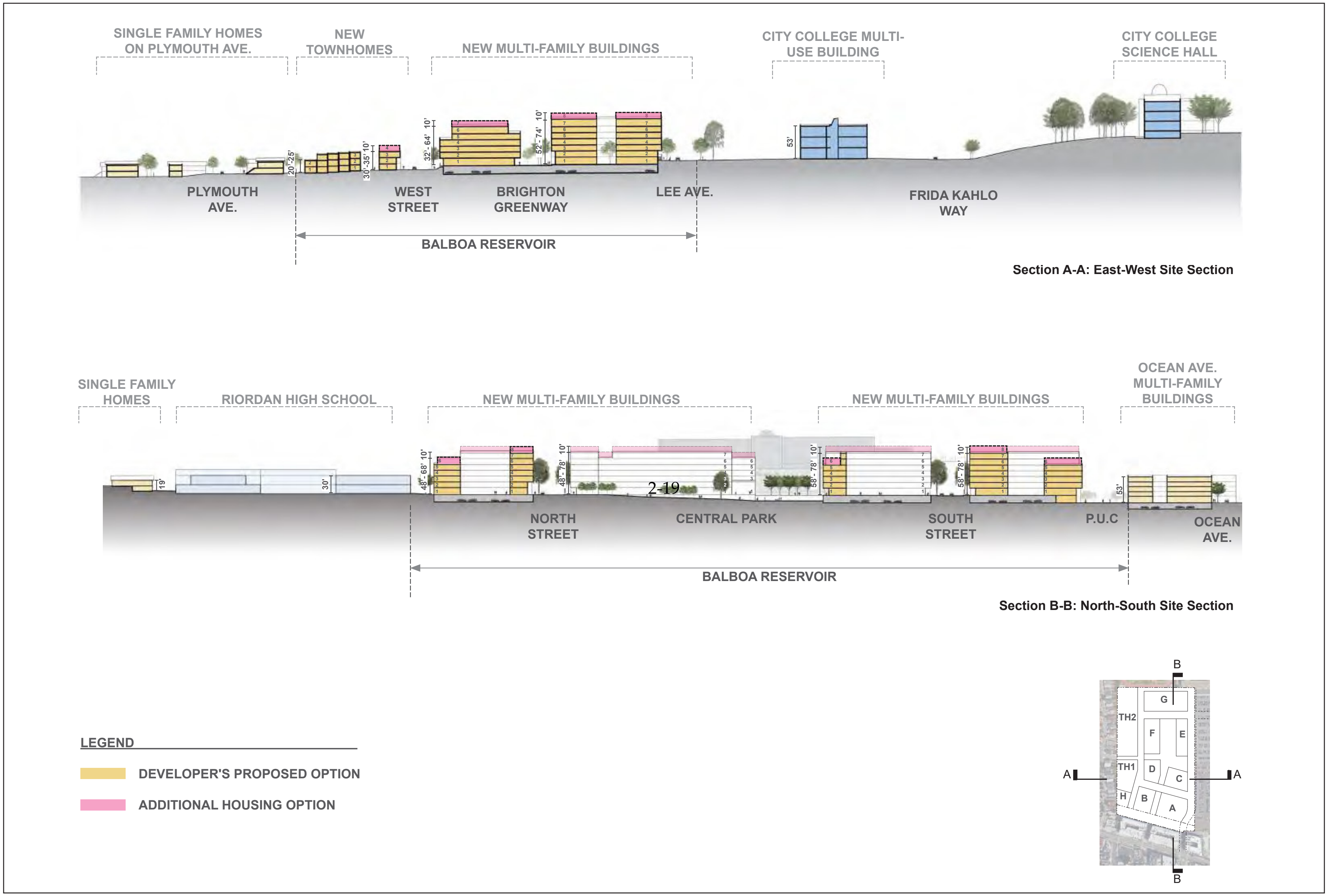
Figure 2-7
Ground Floor Use Plan for Additional Housing Option



SOURCE: Van Meter Williams Pollack LLP, 2019

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Figure 2-8
Site Sections

The project site includes property overlying water and wastewater assets that would retain its public "P" zoning designation. Such property and its use would be governed by a license that SFPUC would grant to the project sponsor and would be subject to SFPUC regulations governing uses in such areas and additional provisions of the design standards and guidelines as determined by SFPUC.

In addition to AvalonBay Communities and Bridge Housing, build-out of the project site would involve additional partner firms. Each of the developers would be bound by the design standards and guidelines. The City would evaluate subsequent submittals of proposed building designs for consistency with both the special use district and the design standards and guidelines.

2.E.5 Open Space Improvements

As shown in **Figure 2-9, Proposed Open Space Plan**, and further described below, the proposed project would provide approximately 4 acres of publicly accessible open space. The open spaces and parks would be connected by new internal networks such as pedestrian passages, sidewalks, and roadways. The proposed pedestrian network is described under SEIR Section 2.E.8, Transportation and Circulation Plan, p. 2-26. The proposed project would also include balconies, rooftops, and courtyards accessible only to building occupants, as well as publicly accessible open space. The City and sponsor would detail the shape and design of open spaces in the design standards and guidelines.

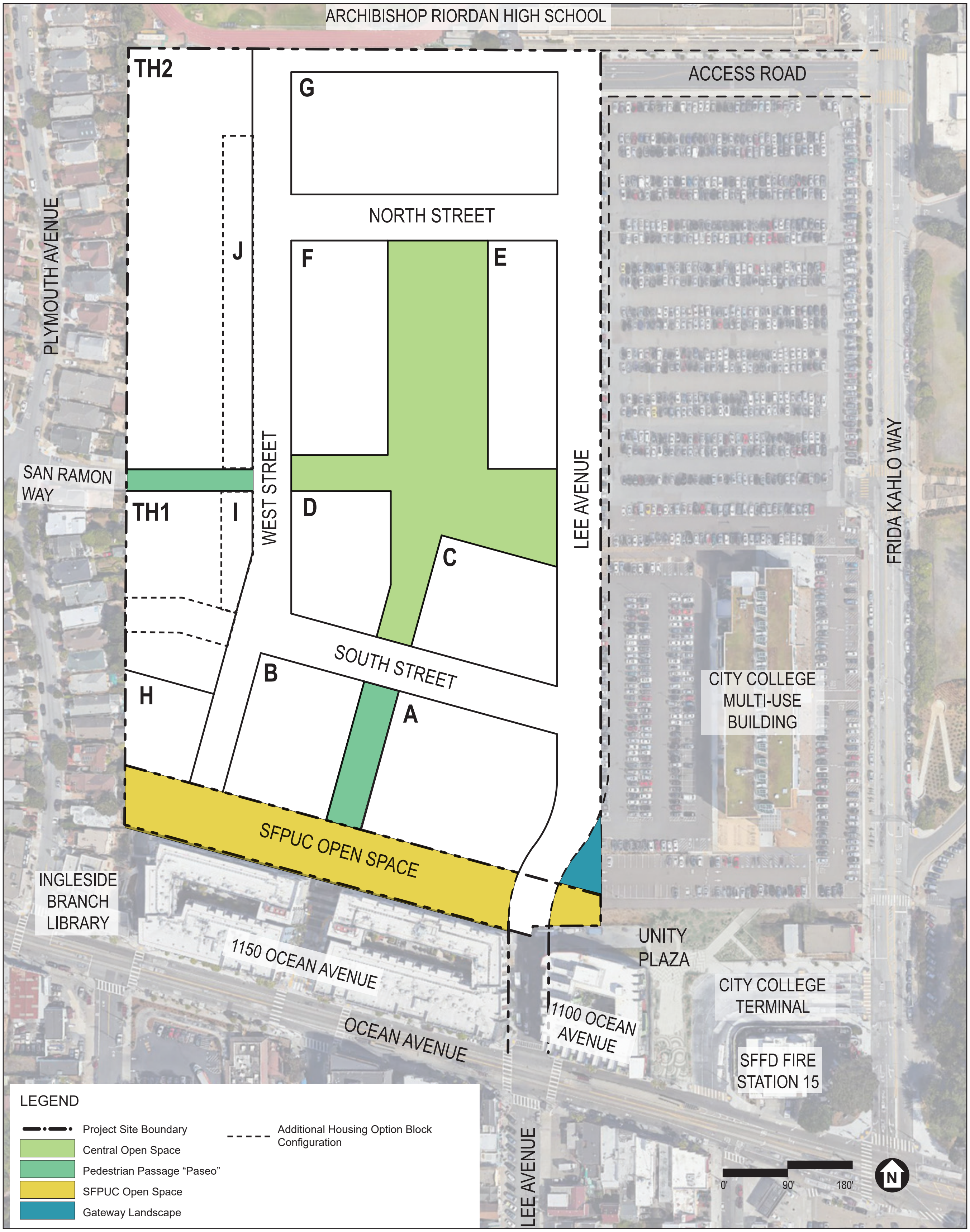
Central Park

This proposed approximately 2-acre park would be located at the center of the project site, generally surrounded by Blocks C, D, E, and F. Potential programming could include a multiuse lawn and terraces, a playground, community garden, picnic area, stormwater gardens and a terrace overlooking the park from the community room.

SFPUC Open Space

South of Blocks A and B abutting the south side of the project site is the 80-foot-wide section of the parcel that contains a large underground water main. SFPUC regulations state that no structures, trees, or woody shrubs are allowed above water and wastewater assets.[31] The City, through the SFPUC, would continue to own the space for utility use. The sponsor proposes this area to serve as an active flexible urban recreation space subject to a license from the SFPUC. Thus, the space could potentially accommodate both the SFPUC's utility use and temporary programming such as a farmers market, sports court, childcare overflow play area, and multiuse lawn.

[31] The SFPUC Asset Protection Standards are regulations that provide guidance to projects in the public right-of-way to protect, maintain the intended function, maintain system performance and level of service requirements, and minimize the risk of damage of SFPUC assets while still being accessible for regular and emergency operations and maintenance. The standards prohibit the placement of permanent structures above water and wastewater assets (such as pipelines).



SOURCE: : Van Meter Williams Pollack LLP, 2019

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Figure 2-9
Proposed Open Space Plan

Gateway Landscape

The proposed 0.15-acre landscaped area would be located at the project site's entrance east of the Lee Avenue and South Street intersection.

2.E.6 Vehicle Parking and Loading

Under both project options, all blocks would be allowed, but not required, to provide parking below grade or at ground level wrapped with active uses (e.g., residential, retail, or childcare). As shown in Table 2-1, p. 2-14, the Developer's Proposed Option and Additional Housing Option include a different number of off-street vehicle parking spaces. With the exception of the townhomes, all residential parking would be unbundled.[32] The differences between the two project options are as follows:

- **Developer's Proposed Option:** The Developer's Proposed Option would provide a total of up to 1,300 off-street vehicle parking spaces. **Figure 2-10, Developer's Proposed Option Parking Facilities and Street Parking Plan**, illustrates the proposed off-street parking locations. Up to 550 off-street parking spaces for project residents may be located in parking garages below grade at Blocks C, D, F, and G and in the townhomes. In addition to resident parking, the Developer's Proposed Option would include a below-grade multilevel public garage of up to 750 spaces located under Blocks A and B and accessed from South Street. The Developer's Proposed Option would include a minimum of seven car-share parking spaces located on streets and in buildings. In addition, the Developer's Proposed Option would include approximately six on-street freight loading areas and approximately eight passenger loading areas along the internal streets.
- **Additional Housing Option:** The Additional Housing Option would provide a total of up to 650 off-street parking spaces for the residents. **Figure 2-11, Additional Housing Option Parking Facilities and Street Parking Plan**, illustrates the proposed off-street parking locations. Up to 650 residential parking spaces for the project could be located in parking garages at or below grade at Blocks A, B, C, D, F, and G. A public parking garage is not proposed as part of this project option. The Additional Housing Option would include a minimum of 12 car-share parking spaces located on streets and in buildings. Vehicle parking would also be available along the internal streets. In addition, the Additional Housing Option would include approximately six on-street freight loading areas and approximately eight passenger loading areas along the internal streets.

2.E.7 Bicycle Parking

Both project options would provide: class 1 bicycle parking spaces located either on the ground floor or in the first below-grade level of each building in the locations compliant with the planning code; and class 2 bicycle parking spaces, all of which would be located in the right-of-way adjacent to each building or in the publicly accessible open space.[33] The Developer's Proposed Option would provide at least 936 class 1 and 75 class 2 bicycle parking spaces. The Additional Housing Option would provide at least 1,100 class 1 and 80 class 2 bicycle parking spaces.

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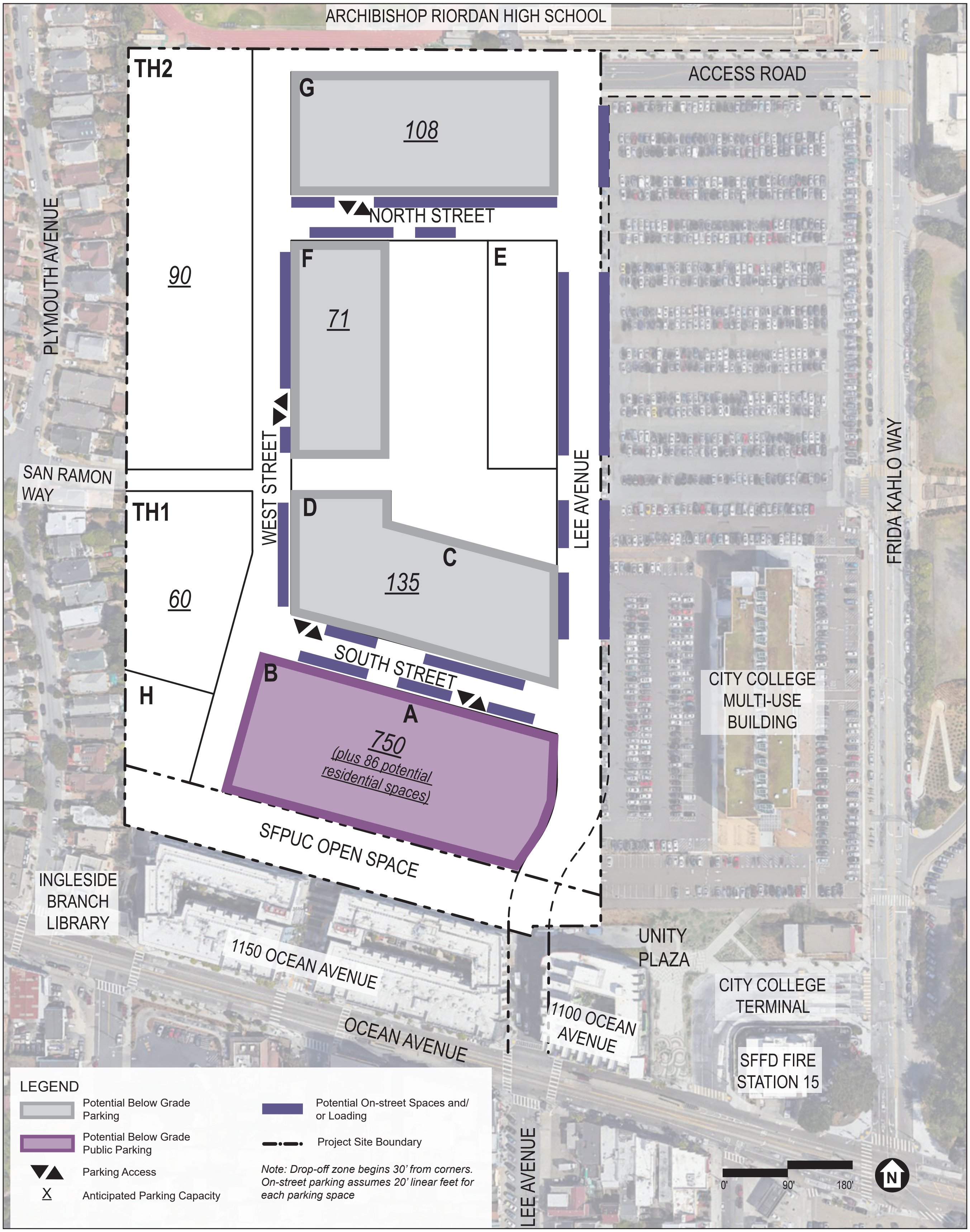
[32] Private parking spaces are leased or sold separately from dwelling units, allowing residents or tenants the option of renting or buying a parking space at an additional cost.

[33] Planning Code section 155.1(a) 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."



SOURCE: Van Meter Williams Pollack LLP, 2019

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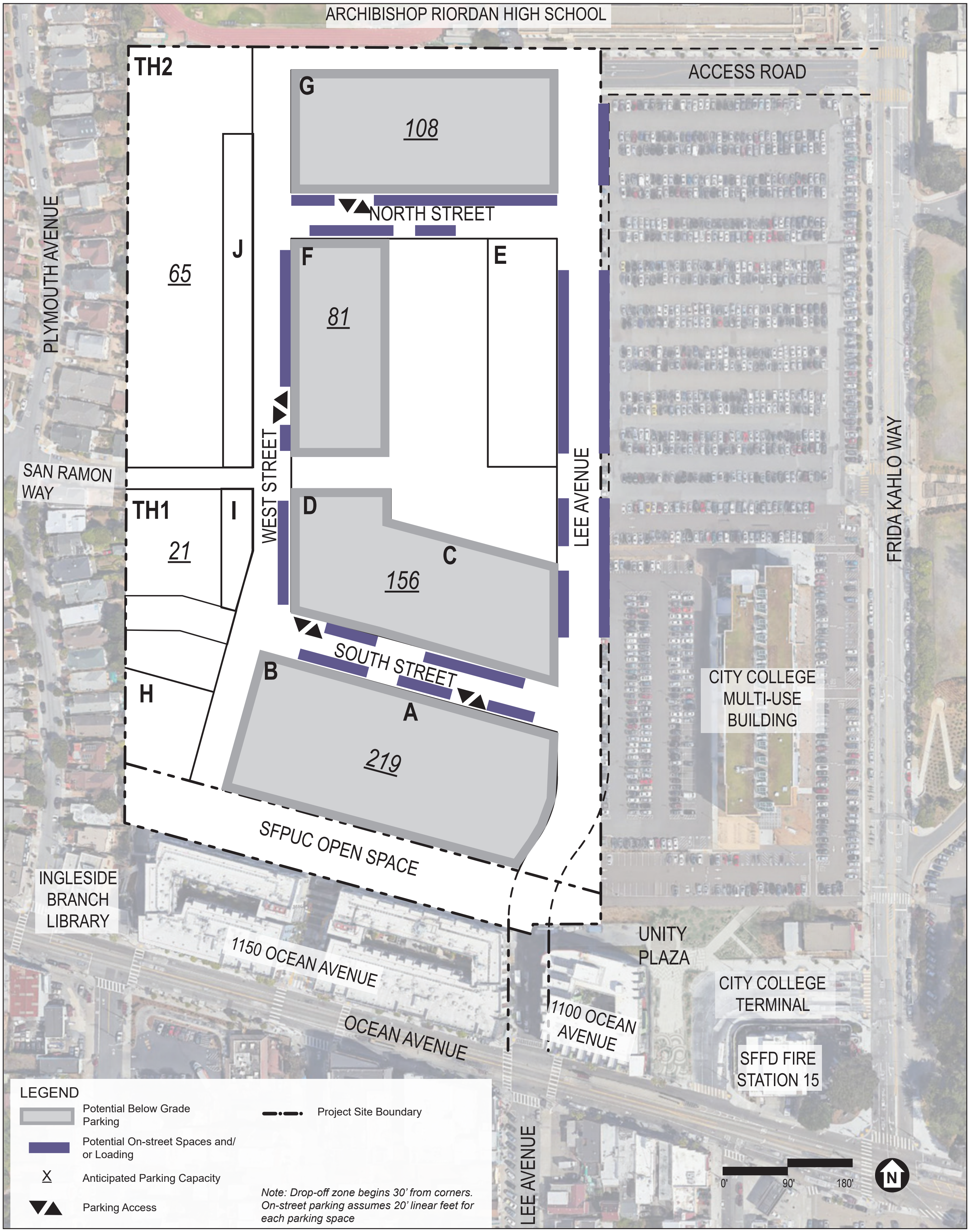
Figure 2-10
Developer's Proposed Option Parking Facilities and Street Parking Plan



SOURCE: : Van Meter Williams Pollack LLP, 2019

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Figure 2-11
Additional Housing Option Parking Facilities and Street Parking Plan

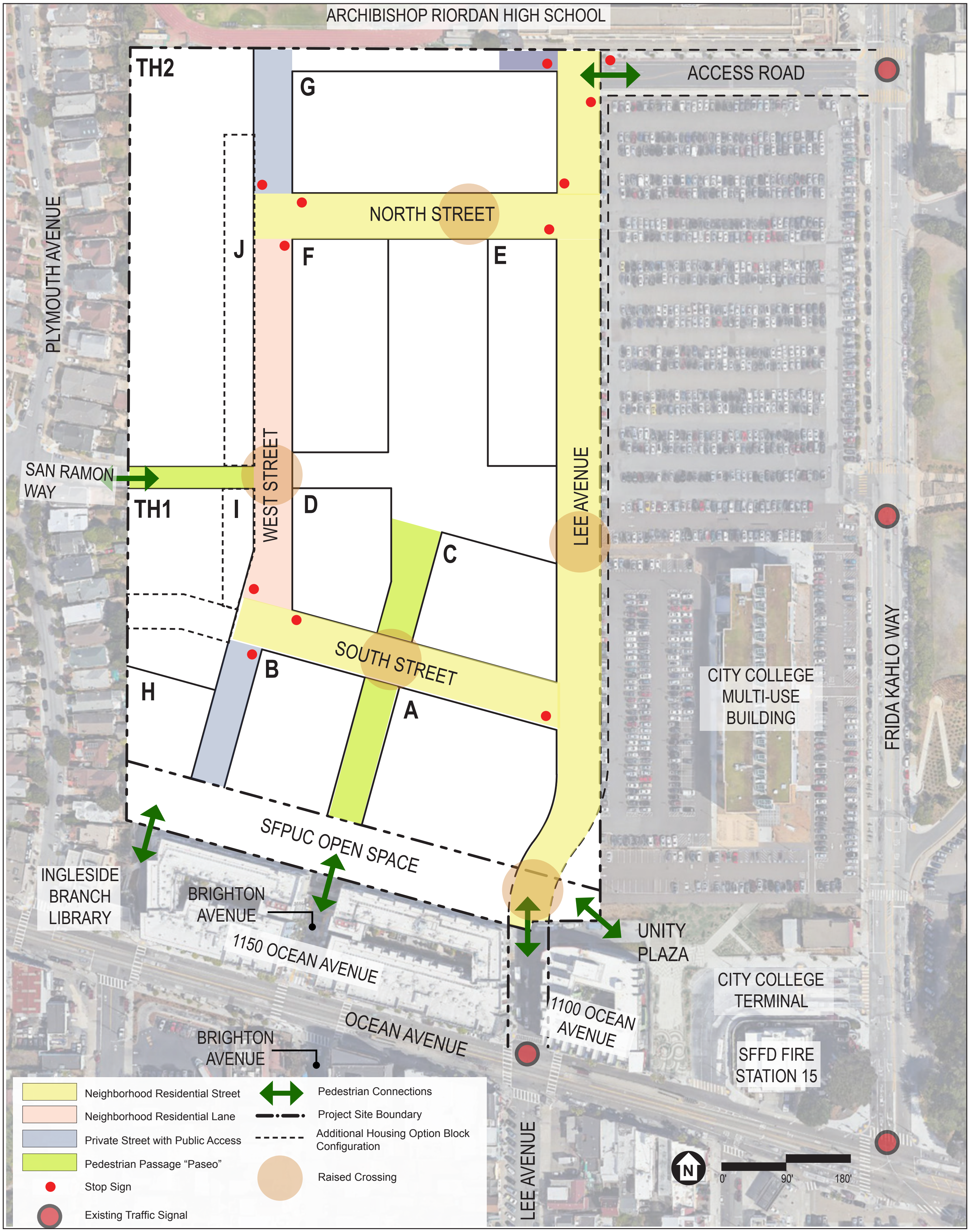
2.E.8 Transportation and Circulation Plan

Vehicular access to the project site would be provided via the intersection of Ocean and Lee avenues from the south, and the access road that would connect to the north end of the project site via Frida Kahlo Way (formerly Phelan Avenue) from the north. Lee Avenue would be extended, as described below, along the eastern project site border and connect to proposed interior streets (see **Figure 2-12, Proposed Street Type Plan**).

The proposed interior streets, which would include the extension of Lee Avenue and new streets designated North, South, and West streets, would be designed according to the principles of the Better Streets Plan.[34] The new internal streets would include street trees and other streetscape elements to encourage walking, biking, and access to nearby public transit. The street network would also provide access for delivery and emergency vehicles, and on-street freight and passenger loading areas.

- **Lee Avenue between Ocean Avenue and the Project Site.** Lee Avenue between Ocean Avenue and the project site is an existing 56-foot-wide right-of-way with one travel lane in each direction and currently terminates at the southeast corner of the project site. Sidewalks on the east and west side of Lee Avenue between the project site and Ocean Avenue are 8 feet wide and 6 feet wide, respectively, including a 3- to 4-foot-wide planting strip. As shown in **Figure 2-13a, Proposed Street Section (Lee Avenue between Ocean Avenue and the Project Site)**, the proposed project would include one 10-foot-wide northbound lane and would reconfigure the southbound Lee Avenue approach to Ocean Avenue from one all-movement lane to one 10-foot-wide southbound through/right-turn lane and one 10-foot-wide southbound left-turn lane with a class III shared roadway[35] bicycle facility (sharrows). This change from two travel lanes to three travel lanes (with shared bicycle access) would preclude the use of curb space along Lee Avenue for freight loading, as currently occurs, because trucks stopped for loading would obstruct one of the travel lanes. Also as part of the project, sidewalks on either side of Lee Avenue between Ocean Avenue and the project site would be widened.
- **Lee Avenue.** The proposed project would extend Lee Avenue along the east side of the site.[36] Lee Avenue would include one travel lane in each direction. As shown in **Figure 2-13b, Proposed Street Section (Lee Avenue)**, Lee Avenue would include an approximately 10-foot-wide vehicle travel lane in each direction, approximately 12-foot-wide sidewalks, and an 8-foot-wide parking lane on both sides of the street. The Lee Avenue right-of-way would be approximately 72 feet wide. In the sidewalks, a 6.5-foot-wide throughway zone would be buffered from vehicular traffic by a 6-foot-wide planting/furnishing strip. An 8-foot-wide parking lane would be provided on the west side of the street. Lee Avenue would have class IV facilities (protected bike lanes) in both directions between South Street and the north access road. The functionality of the existing "exit only" driveway for Archbishop Riordan High School west of the Lee Avenue and north access road intersection would be maintained. The street connecting the "exit only" driveway to Lee Avenue would be 20 feet wide and one-way eastbound. It would not be a continuous street from West Street (see Figure 2-12).

[34] San Francisco Planning Department, *San Francisco Better Streets Plan*, adopted December 2010.
[35] Bicycles share the travel lane with vehicles.
[36] The Lee Avenue right-of-way would travel along what is currently the western boundary of the surface parking lot behind City College's Multi-Use Building; this portion of the existing parking lot is within the project site.



SOURCE: : Van Meter Williams Pollack LLP, 2019

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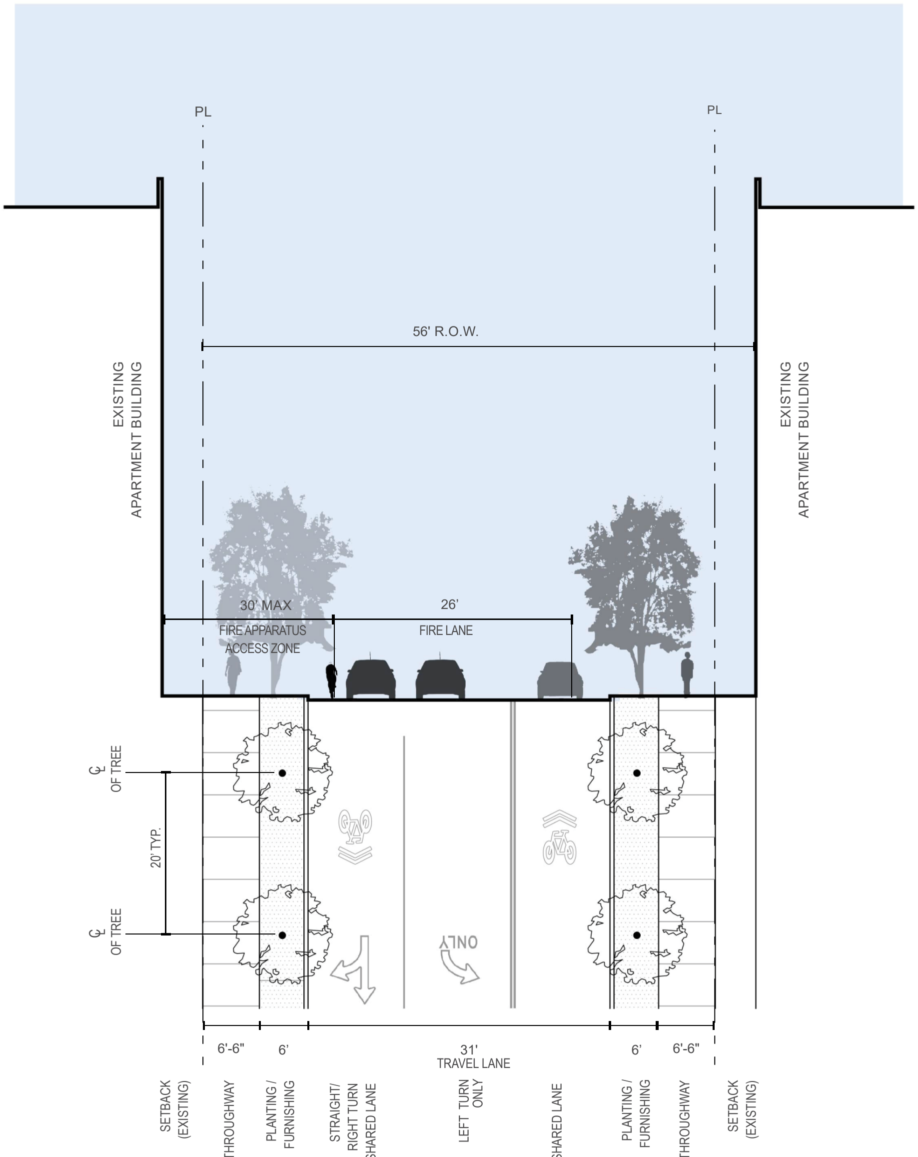
Figure 2-12
Proposed Street Type Plan



SOURCE: Van Meter Williams Pollack LLP, 2019

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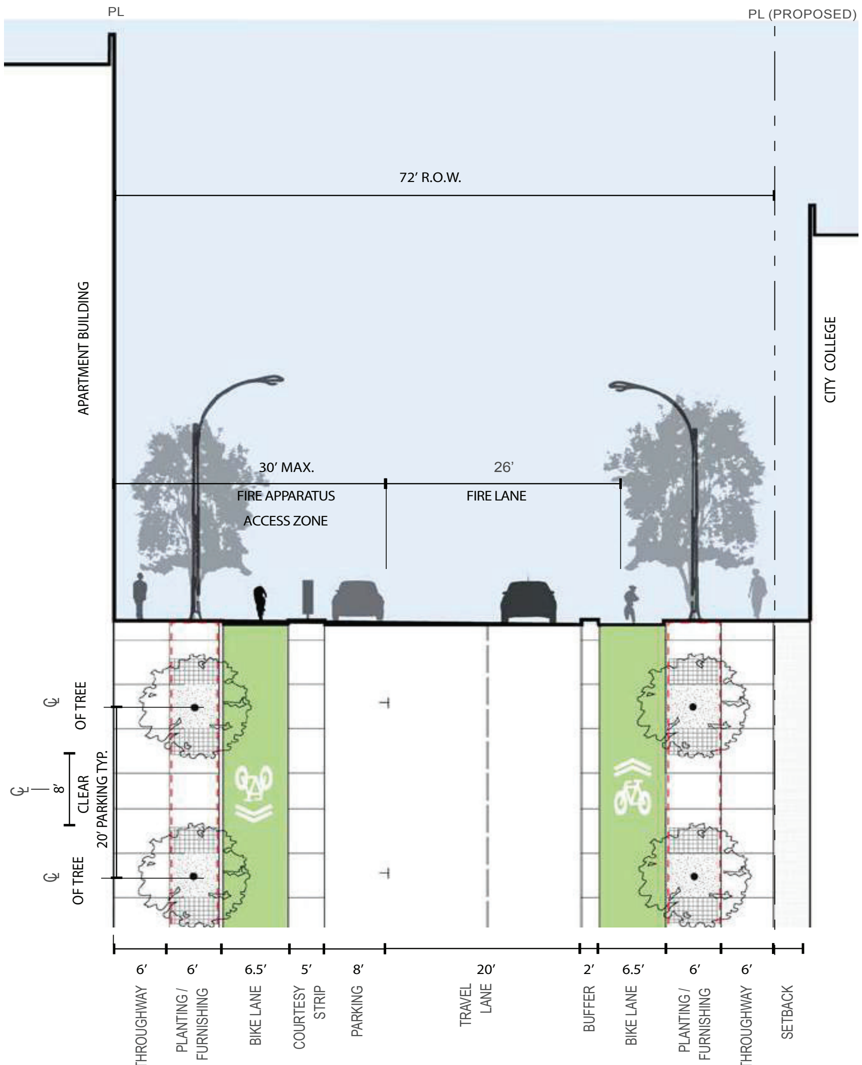
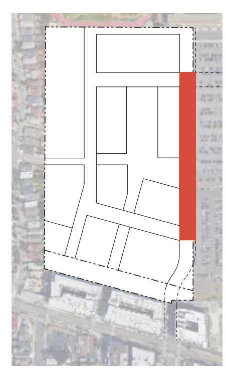
Figure 2-13a
Proposed Street Section
(Lee Avenue Between Ocean Avenue and the Project Site)





SOURCE: Van Meter Williams Pollack LLP, 2019

Figure 2-13b
Proposed Street Section (Lee Avenue)

A raised crossing with a rectangular rapid flashing beacon would be installed at the Lee Avenue and SFPUC Open Space intersection as a traffic calming measure and to emphasize pedestrian priority. Advance pedestrian warning signs and advance yield lines would be placed to notify drivers of the raised crossing. At the south of the project site, Lee Avenue would cross SFPUC's 80-foot-wide right-of-way. No structures, street lights, poles, trees, or woody shrubs would be installed along Lee Avenue over this SFPUC right-of-way due to the presence of underlying pipelines.

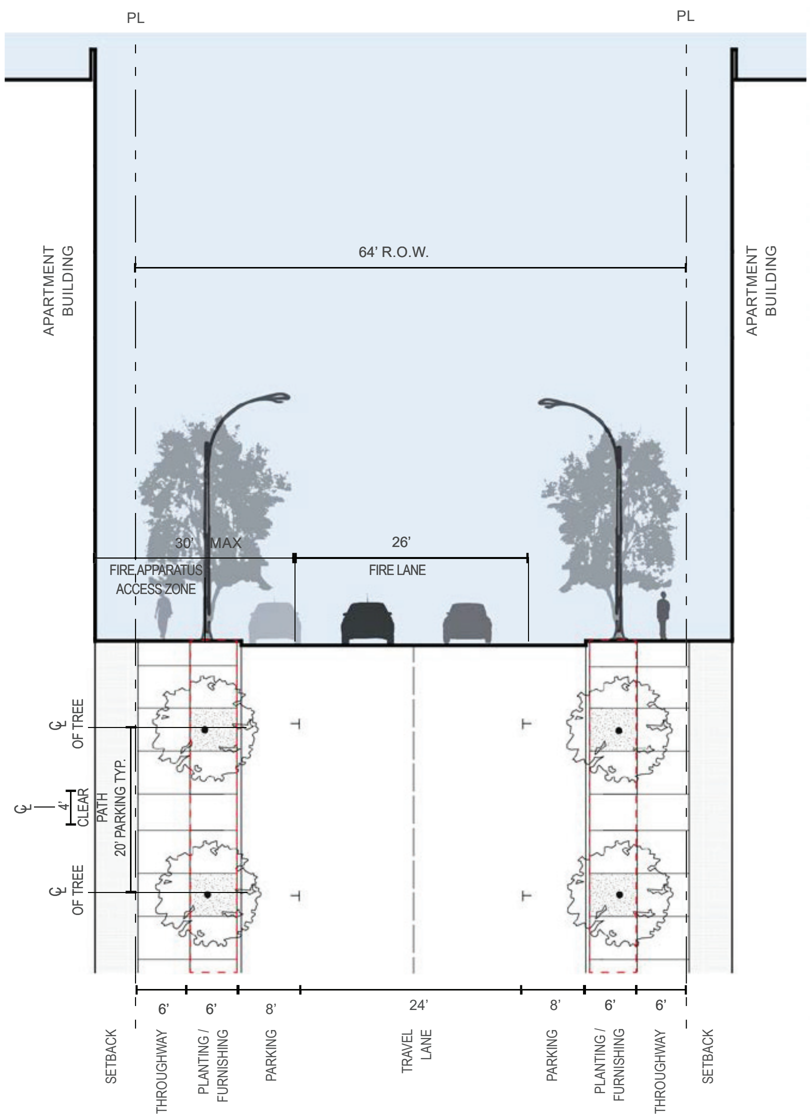
- **North and South Streets.** North and South streets would be east–west interior neighborhood residential streets and would provide pedestrian, vehicular, and bike access to the individual buildings. As shown in **Figure 2-14, Proposed Street Section (North and South Streets)**, North and South streets would have rights-of-way approximately 64 feet wide and would include a single 12-foot-wide lane of travel in each direction. North and South streets would also include 8-foot-wide parking lanes and 12-foot-wide sidewalks on both sides of the street. In the sidewalks, a 6-foot-wide throughway zone would be buffered from vehicular traffic by a 6-foot-wide planting/furnishing strip. As shown in Figure 2-14, North Street would be located between Blocks G and E/F, and South Street would be located between Blocks C/D and A/B. North and South streets would be shared roadways that would include bicycle facilities.
- **West Street.** West Street would be a north–south interior neighborhood residential street, and would provide pedestrian, vehicular, and bike access to individual buildings and to the townhome blocks. As shown in **Figure 2-15, Proposed Street Section (West Street))**, West Street would include a 12.5-foot-wide single lane of travel in each direction and would have an approximately 54-foot right-of-way. A 10.5-foot-wide sidewalk would be provided on both sides of the street and an 8-foot-wide parking lane would be provided on the east side of the street. This street would be a shared roadway that would include bicycle facilities. A raised crossing would be installed at the central park open space entry point.

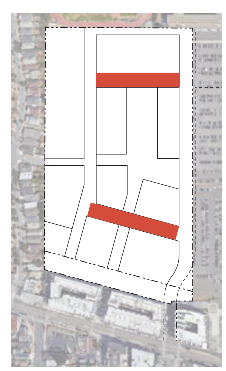
The street network designs would be required to undergo detailed design and review to ensure that they are designed to meet city design standards. The street designs would be subject to approval by SFMTA, San Francisco Department of Public Works, and the San Francisco Fire Department, along with other city agencies, to ensure that the streets are designed consistent with city policies and design standards. The interior streets would also be regulated by SFMTA with regard to loading and parking spaces.

Ocean Avenue Streetscape Modifications

As described above, the proposed project would extend Lee Avenue, which is currently a dead-end street, into a through street. Currently, the dead-end configuration allows for loading activities associated with Whole Foods (1150 Ocean Avenue) and other nearby retail and residential uses to occur with minimal conflict. Some of this loading activity occurs in the No Parking zones on Lee Avenue.[37] The project extension to Lee Avenue would effectively reduce the existing supply of on-street loading available to Whole Foods and other nearby uses. Therefore, as part of the proposed project, five 21-foot-long metered parking spaces (totaling 105 feet) along the Ocean Avenue frontage of 1150 Ocean Avenue would be converted to metered loading spaces between the hours

[37] The existing 1150 Ocean Avenue loading operations currently do not fully adhere to the measures outlined in the building's Planning Commission conditions of approval. 1150 Ocean Avenue, Case No. 2006.0884CEU Motion No. 17885, Hearing date: May 21, 2009, *http://commissions.sfplanning.org/cpcpackets/2016-003525CUA.pdf*, accessed April 26, 2019.





SOURCE: Van Meter Williams Pollack LLP, 2019

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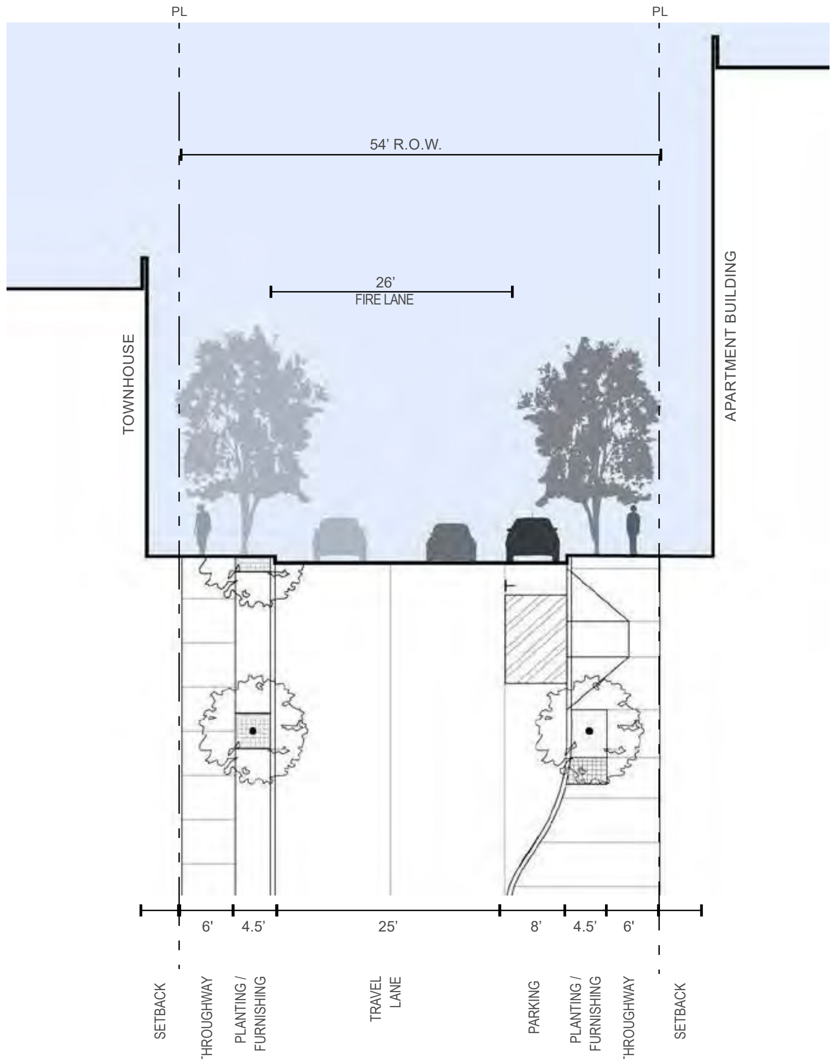
Figure 2-14
Proposed Street Section (North and South Streets)



SOURCE: Van Meter Williams Pollack LLP, 2019

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Figure 2-15
Proposed Street Section (West Street)

of 6 a.m. and 2 p.m. (subject to SFMTA approval) to replace the loading activity that exists on the existing dead-end segment of Lee Avenue. This proposed modification is analyzed in SEIR Section 3.B, Transportation and Circulation.

Pedestrian and Bicycle Network

The proposed project would include a new pedestrian and bicycle network. As shown in **Figure 2-16, Proposed Dedicated and Shared Bicycle Circulation**, the proposed project would include class II, class III, or class IV bicycle facilities.[38] Class IV facilities (protected bike lane) are proposed on Lee Avenue between South Street and the north access road and shown in Figure 2-13a, p. 2-28. South of South Street, Lee Avenue would gradually narrow to meet the existing 56-foot-wide right-of-way at the project boundary and would have class II facilities (bicycle lanes) along this portion. As shown in Figure 2-13b, p. 2-29, class III facilities (shared lanes) are proposed on Lee Avenue between the project boundary and Ocean Avenue. Class III facilities (shared lanes) are proposed on North, South, and West streets. Bicycle access to the project site would be via class III bicycle facilities on Ocean Avenue, and via class II bike lanes on Frida Kahlo Way.

Figure 2-12, p. 2-27, illustrates the proposed pedestrian access and connections on the project site. As shown in Figure 2-12 and Figure 2-16, p. 2-34, shared pedestrian and bicycle access to the site would be provided at Brighton Avenue on the south side, and San Ramon Way on the west side of the site. The project site would also be accessible via a shared pedestrian and bicycle connection along the access road along the north of the east basin (City College property). Pedestrian access to the site would also be provided at Unity Plaza (see Figure 2-12) and east of the Ingleside Branch Library. As shown in Figure 2-12, the central park and SFPUC open space areas would be linked by the landscaped shared pedestrian and bicycle passages through the site.[39] The proposed buildings and residential lobbies would be accessible from the interior streets, connected directly to public sidewalks. The pedestrian and bicycle crossings at Lee Avenue and North, South, and West streets may be raised slightly to emphasize the pedestrian priority of the open space network. A representation of the proposed pedestrian paseos is included in **Figure 2-17, Representative Proposed Pedestrian Paseo Section**.

Transportation Demand Management

The proposed project would include a transportation demand management (TDM) program that would implement measures to reduce vehicle trips and encourage sustainable modes of transportation. The TDM program may include both physical (e.g., bicycle and car-share parking) and programmatic (e.g., incentives) measures.

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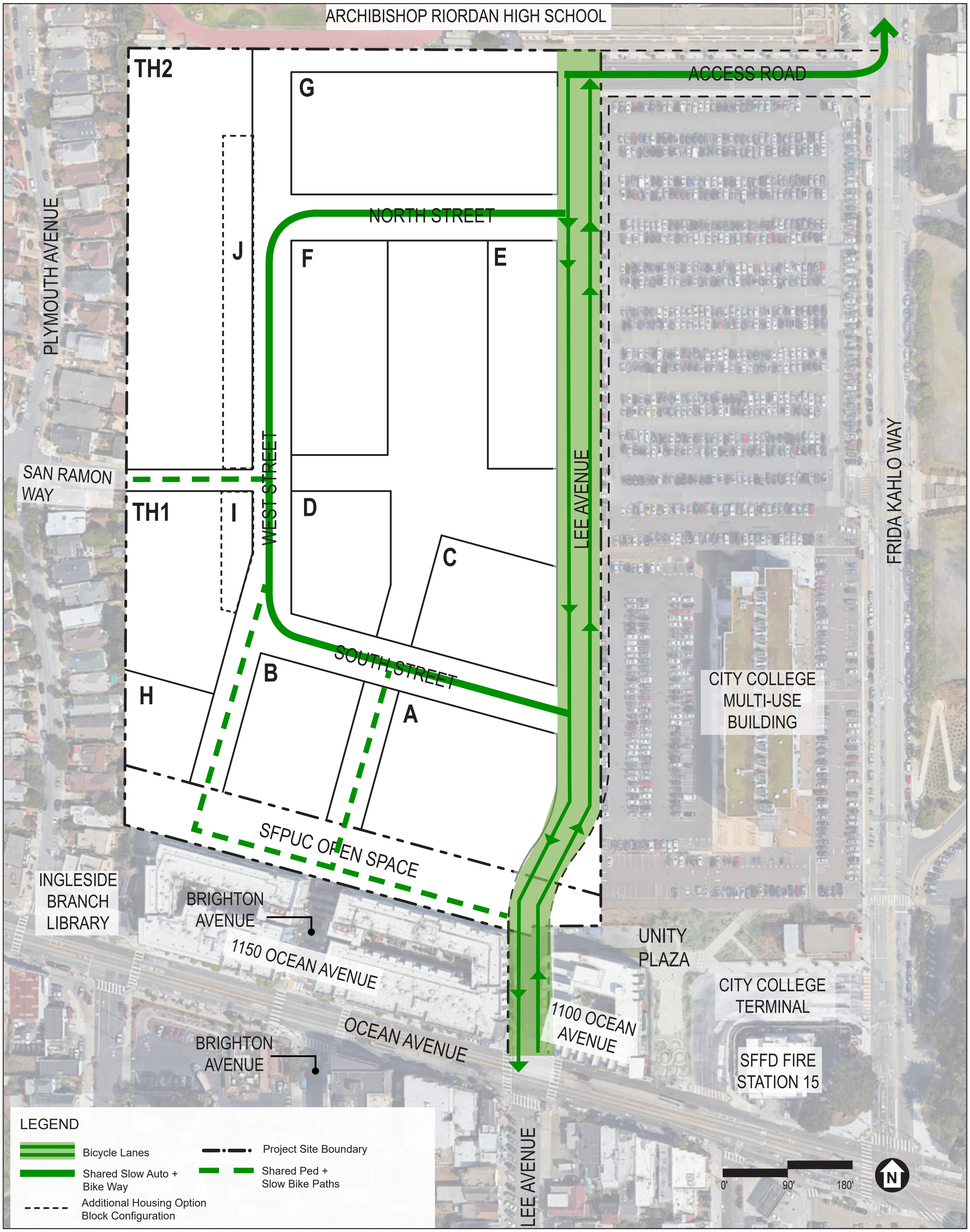
38 *Class II* bikeways are bike lanes striped within the paved areas of roadways and established for the preferential use of bicycles. *Class III* bikeways are signed biked routes that allow bicycles to share the travel lane with vehicles. *Class IV* bikeways, often referred to as cycle tracks, are for the exclusive use of bicycles, physically separated from motor traffic with a vertical feature. The separation may include, but is not limited to, grade separation, flexible posts, inflexible barriers, or on-street parking.

39 SFPUC high-pressure water transmission pipelines are situated under the SFPUC Open Space and Unity Plaza and prohibit the installation of any structures. The maintenance, repair, and installation of new pipelines may temporarily disrupt the pedestrian and bicycle access over the SFPUC right-of-way.



SOURCE: Van Meter Williams Pollack LLP, 2019

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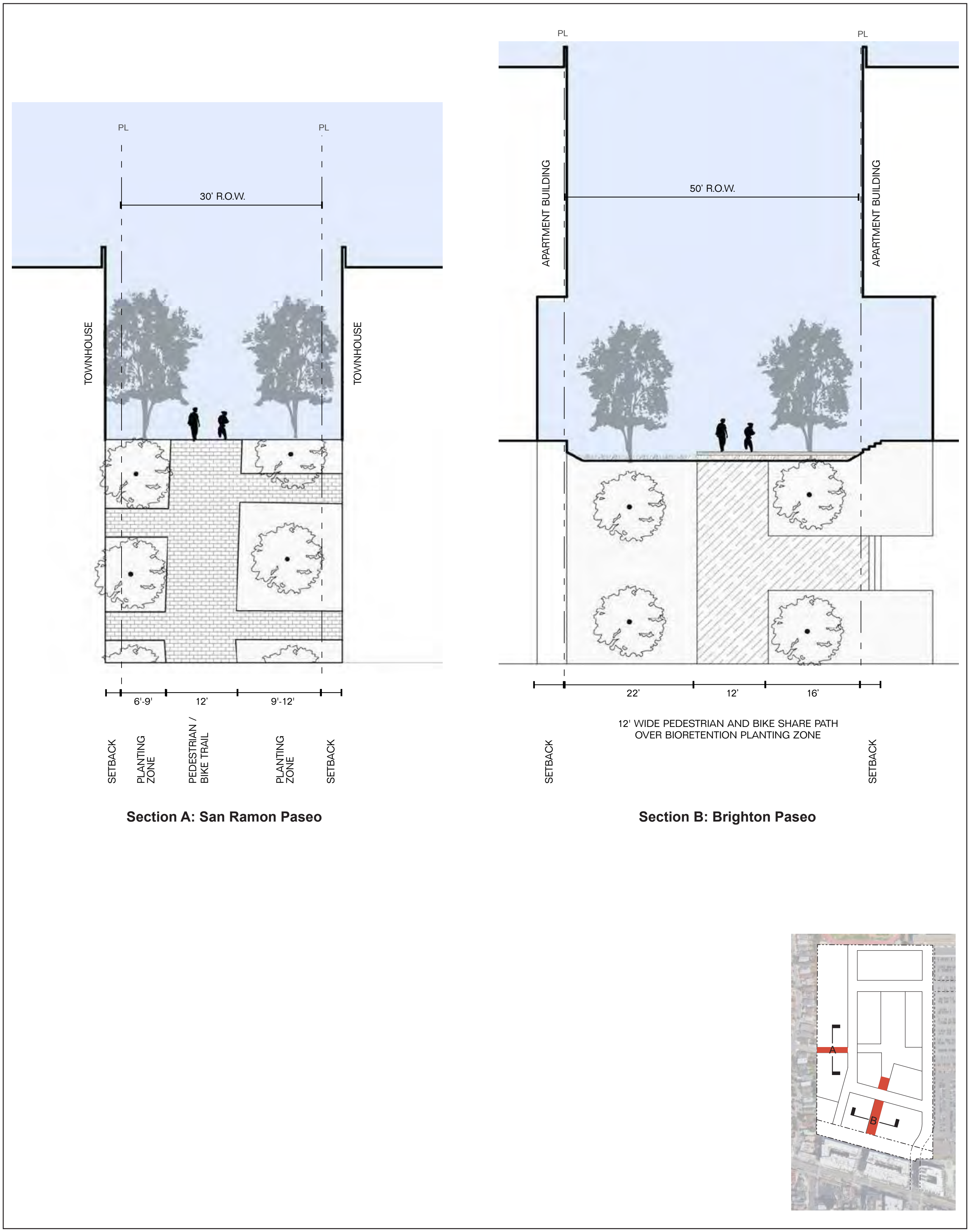
Figure 2-16
Proposed Dedicated and Shared Bicycle Circulation



SOURCE: Van Meter Williams Pollack LLP, 2019

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Figure 2-17
Representative Proposed Pedestrian Paseo

Towards the goal of achieving a sustainable land use development, the TDM program would prioritize pedestrian and bicycle access and implement measures to encourage alternative modes of transportation. Onsite childcare and affordable housing would be among the features of the TDM program. Sustainable modes of transportation would be encouraged through building a walkable, mixed-use, transit-oriented development, encouraging bicycling and walking, and reduced parking ratios for residential uses. Sidewalk and streetscapes would be designed to prioritize safety for pedestrians and bicyclists.

Key strategies in the TDM plan include improved walking conditions and bike lanes, unbundled parking, car-share parking, and other approaches to discourage use of single-occupant private vehicles. See the additional discussion of the TDM plan in SEIR Section 3.B, Transportation and Circulation.

2.E.9 Infrastructure and Utilities

The proposed project would develop infrastructure and utility systems to support the proposed uses at the site. This would include the following:

- **Potable Water.** The project would include construction of potable water distribution piping located under the planned streets and open spaces. These water distribution pipelines would connect to the existing water lines in Ocean Avenue and Frida Kahlo Way adjacent to the project site. To reduce potable water demand, high-efficiency fixtures and appliances would be installed in new buildings.
- **Non-potable Water.** To meet the goals of Health Code article 12C, some or all of the buildings onsite would be piped with dedicated non-potable water piping supplied to each toilet and urinal and for irrigation purposes. Graywater (the wastewater from lavatories, showers, baths, and washing machines) would be diverted from the sewers by capturing, treating onsite, and reusing it to satisfy these non-potable water demands. Since there would be different developers for each building, a shared district graywater treatment system is not proposed; rather, as each building is constructed, a dedicated graywater treatment system would be installed for that building. Therefore, a dedicated graywater treatment system would be fully developed and coordinated with SFPUC as the project evolves.
- **Auxiliary Water Supply System.** The project would include construction of auxiliary water supply system (AWSS)[40] distribution lines and fire hydrants that would serve the project primarily for firefighting and other emergency uses. The proposed project's AWSS distribution pipelines would connect to the existing AWSS line in Ocean Avenue.
- **Wastewater.** The project would include construction of wastewater collection lines throughout the site. These wastewater pipelines would connect to the existing combined sewer system in Ocean Avenue and Frida Kahlo Way. The wastewater from the site would be collected and conveyed to the Westside Pump Station for treatment at the Oceanside Treatment Plant.
- **Stormwater.** The proposed project would include a stormwater management system that would comply with the City's stormwater management ordinance. The system would be designed with low-impact design concepts and stormwater management systems, designed to retain and reuse some of the stormwater captured onsite. As required, proposed streets would also incorporate bio-filtration via bioswales or pervious surfaces where feasible.

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[40] The high pressure AWSS is a system independent from the city's municipal potable water system and built solely for the purpose of firefighting.

- **Electricity.** Pacific Gas and Electric Company (PG&E) has both overhead and underground lines along Frida Kahlo Way and underground lines along Ocean Avenue. The proposed project would extend electrical distribution lines to serve the project site.
- **Natural Gas.** There are existing natural gas lines in Ocean Avenue and Frida Kahlo Way. The proposed project would extend natural gas distribution lines throughout the site, connecting to the existing lines.
- **Emergency Generators.** The Developer's Proposed and Additional Housing Options would include two and six backup emergency generators, respectively.[41] No emergency generators would be installed near the SFPUC right-of-way due to the presence of subsurface high-pressure water transmission pipelines.
- **Existing Infrastructure Under SFPUC Property.** In 2010, as part of the construction of the Multi-Use Building on the east basin, City College constructed a series of subgrade hydronic wells that, in combination with a ground-source heat pump, provide both heating and cooling for the Multi-Use Building.[42] The system was also designed to serve four future but unidentified buildings.[43] The hydronic wells were installed beneath the Multi-Use Building and extend into SFPUC property to the west, beneath the Balboa Reservoir project's proposed Lee Avenue extension and right-of-way along the east side of the project site.[44] The hydronic wells are also located under portions of proposed Blocks A and C and South Street. The utility pipelines that extend beneath the project site would be removed during construction and the remainder of the system would be maintained. The hydronic wells under the Lee Avenue easement and project site would be removed or capped, in accordance with a Memorandum of Understanding with City College.

2.E.10 Sustainability Plan

The proposed project would establish a sustainability plan that outlines performance and monitoring criteria for its operation. The project would comply with the state's Title 24 and San Francisco Green Building Code requirements for energy efficiency and the San Francisco Water Efficient Irrigation Ordinance (San Francisco Administrative Code chapter 63) for water efficiency. The project sponsor would evaluate renewable energy approaches such as solar and living roofs as part of the sustainability plan to be included in the proposed project. The project would pursue Leadership in Energy and Environmental Design™ (LEED®) Gold® certification for the proposed buildings.[45]

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41 Emergency diesel generators are only required if the top floor level is higher than 75 feet. It is unlikely that the top floor level for each proposed project option would be higher than 75 feet. However, the analysis in this SEIR conservatively assumes that the proposed project options would include emergency diesel generators.

42 Pfau Long Architecture, *Sustainable CCSF Multi Use Building*, November 15, 2012. Available at: *https://www.pfaulong.com/sustainable-ccsf-multi-use-building/*; accessed June 20, 2019.

43 City College of San Francisco, *Ocean Avenue (Main) Campus Infrastructure Upgrade Project Initial Study/Mitigated Negative Declaration*, March 2019; p. 6. Available at: *http://www.ccsf.edu/content/dam/Organizational_Assets/About_CCSF/Admin/facilities_planning/PlanningConstruction/CCSF_Ocean_Infrastructure_Web%20Version.pdf*; accessed June 20, 2019.

44 Herrera, Dennis, City Attorney, City and County of San Francisco Office of the City Attorney, letter to Steve Bruckman, General Counsel, City College of San Francisco, Re: City College Infrastructure Encroachments, February 14, 2019.

45 LEED is a green building certification program developed by U.S. Green Building Council (USGBC). LEED v4 is the newest version of the program. LEED uses a green building rating system designed to reduce the negative environmental impacts of buildings and improve occupant health and well-being. Building projects satisfy prerequisites and earn points to achieve different levels of certification. Based on the number of points achieved, a project then earns one of four LEED® rating levels: Certified®, Silver®, Gold®, or Platinum®.

2.F Project Variants

In addition to the specific characteristics of the proposed project described above, there are four proposed variants: (1) Aboveground Public Parking; (2) South Street Alignment and Aboveground Public Parking at North End of Site; (3) Assumes Pedestrians and Bicycles Would Not Access the Site via San Ramon Way; and (4) North Street Extension. The variants modify one limited feature or aspect of the Developer's Proposed Option, unlike the alternatives to the proposed project analyzed in SEIR Chapter 6, Alternatives, which provide a different features or characteristics to the proposed project. Therefore, each variant is the same as the Developer's Proposed Option except for the specific variation described. The variants are being considered by the project sponsor but have not been confirmed to be part of the Developer's Proposed Option. Only Variant 4 applies to both project options. These variants are analyzed in SEIR Chapter 5, Variants, at a sufficient level of detail so that any variant or combination of variants could be included in the Developer's Proposed Option (Variants 1–4) and the Additional Housing Option (Variant 4 only) as part of an approval action.

2.G Project Construction Overview and Schedule

Construction of the proposed project is anticipated to occur in three main phases over the course of six years, from 2021 to 2027, as depicted in **Table 2-2, Preliminary Construction Schedule by Phase**. The construction phasing and durations would be similar for both project options.

TABLE 2-2
PRELIMINARY CONSTRUCTION SCHEDULE BY PHASE

Construction Stage	Proposed Development under Developer's Proposed Option	Proposed Development under the Additional Housing Option	Start	Finish	Duration
Phase 0 (Grading and Site Infrastructure)			2021	2022	1 year
Phase 1	Block TH 1 Block TH 2 Block C Block D Block E Block F	Block TH 1 Block TH 2 Block C Block D Block E Block F Block I Block J	2022	2024	2.5 years
Phase 2	Block A Block B Block G Block H	Block A Block B Block G Block H	2024	2027	2.5 years

SOURCE: Reservoir Community Partners LLC, 2018.

NOTES:

All dates and construction phasing estimates are subject to change by market conditions and other factors. Under an extended construction schedule, construction activities would be less intensive and would have less overlap between the phases. If construction occurs over a compressed three-year period, Phases 1 and 2 could occur simultaneously over two years following Phase 0.

The initial phase (Phase 0) would include demolition of the parking lot, west side berm, and north and east embankments, followed by grading, excavation, and construction of site infrastructure over 12 months from 2021 to 2022. Two phases of vertical construction would follow, each lasting up to 30 months. The construction activities during Phases 1 and 2 would include, but not be limited to, finish grading, excavation for subgrade parking, construction of building foundations, building construction, architectural coatings, and paving. **Figure 2-18, Proposed Developer's Option Construction Phasing**, and **Figure 2-19, Additional Housing Option Construction Phasing**, shows the vertical construction phasing on the project site. As shown in Figure 2-18 and Figure 2-19, the townhome and inner blocks would be constructed first during Phase 1, followed by development of the south and north ends of the site during Phase 2. As shown in Table 2-2, multiple blocks would be developed under each Phases 1 and 2 for both project options. In general, the construction of each block and associated buildings would occur in parallel for each phase for both project options. Construction of Phase 1 would occur from 2022 to 2024. Construction of Phase 2 would occur from 2024 to 2027, after Phase 1 is complete. Buildings constructed in Phase 1 would be occupied during construction of Phase 2.

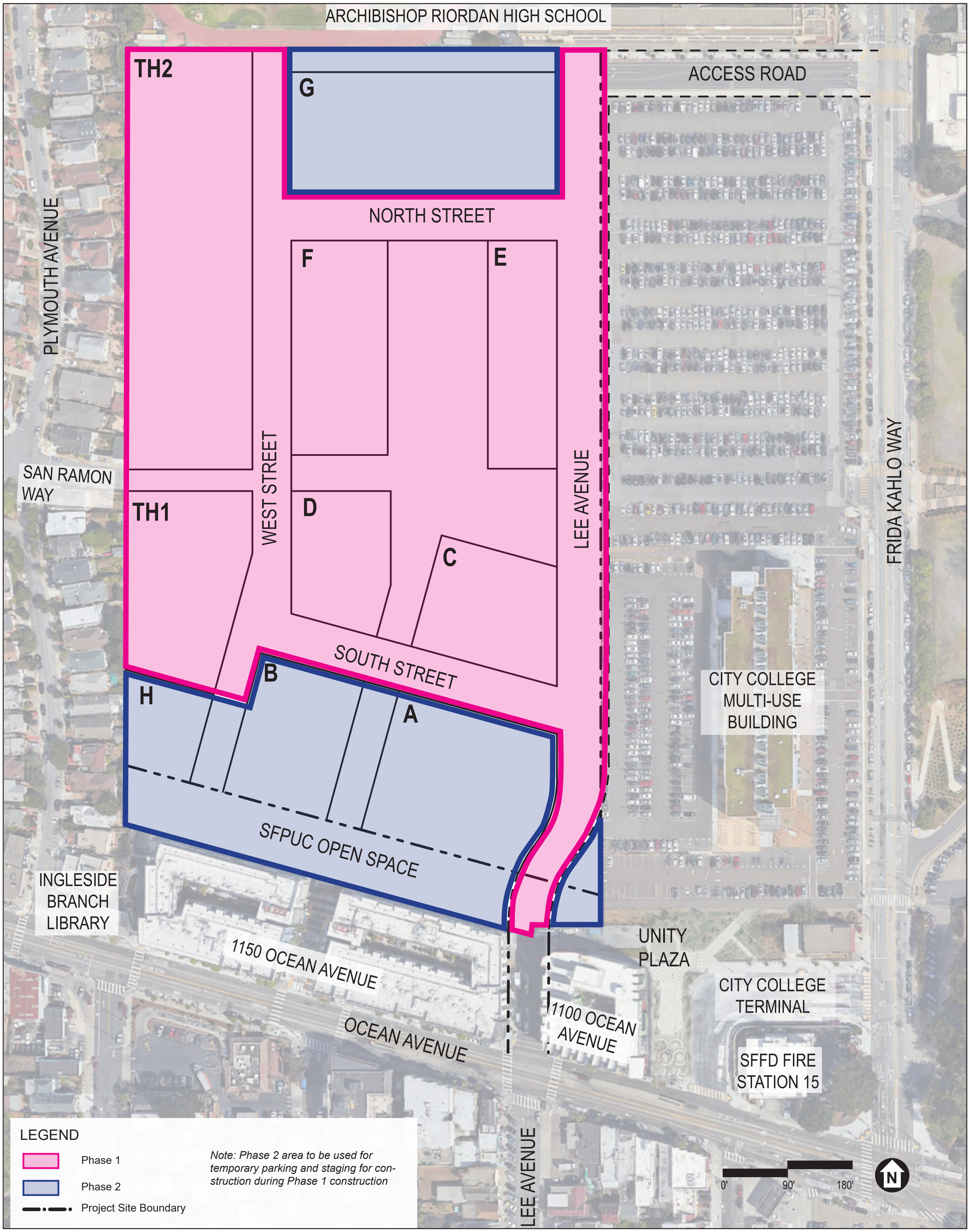
As stated in the footnote to Table 2-2, the phasing of project implementation would be subject to changes due to market conditions and other unanticipated factors. Consequently, construction could be complete as early as 2024 under a compressed schedule or extend beyond 2027. If construction occurs over a shorter period than shown in Table 2-2 (e.g., Phases 1 and 2 occurring simultaneously following Phase 0), a relatively larger amount of construction would take place during a relatively shorter period of time of three years, thereby increasing the typical daily construction activity. The construction analysis in SEIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, is generally based on conservative assumptions where appropriate and described in the "Approach to Analysis" section of the resource topic area.

Construction would generally occur between the hours of 7 a.m. and 8 p.m., up to seven days a week, consistent with San Francisco Police Code section 2908. Certain construction activities such as large concrete pours, may require earlier start or later finish times to accommodate such time-specific activities. Construction activities that extend beyond normal hours would be subject to review, permitting, and approval by the San Francisco Department of Building Inspection.

2.G.1 Grading, Soil Excavation, and Hauling

Currently, the grade of the site along the west side is approximately at the same elevation as the adjacent residential area along Plymouth Avenue within Westwood Park; however, the two areas are separated by the 30-foot-tall berm. As described under SEIR Section 2.D.2, Project Site, p. 2-7, the project site slopes gently upward from west to east. There are also 18- and 30-foot increases in elevation between the project site bottom and the top of the eastern and northern slopes, respectively.

The proposed project would require removal of the west side berm, and north and east embankments, with the soil redistributed and used as fill to raise the grade of the project site such that once constructed, the ground floor levels of the buildings, pathways, and roadways would match the grades of adjacent areas along each side of the site (see Figure 2-8, p. 2-20).



SOURCE: Van Meter Williams Pollack LLP, 2019

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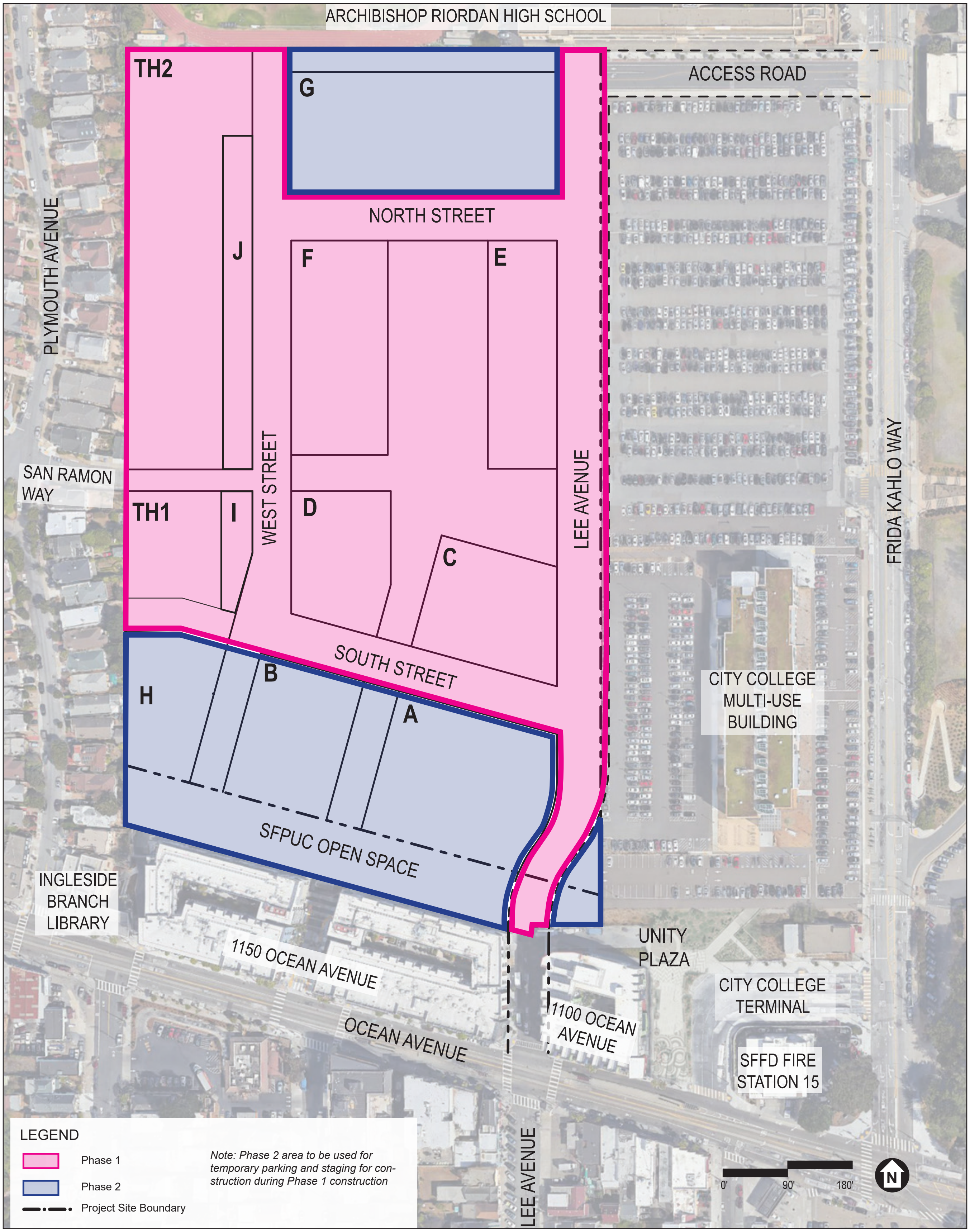
Figure 2-18
Developer's Proposed Option Construction Phasing



SOURCE: Van Meter Williams Pollack LLP, 2019,
San Francisco Planning Department, 2019

Figure 2-19
Additional Housing Option Construction Phasing

Soil excavation and grading of the site would occur during Phase 0 of construction. The proposed grading plan intends to balance the site and use as much cut soil as fill soil in other areas of the site, minimizing the need for either soil import or export. The Developer's Proposed Option would require approximately 171,000 cubic yards of cut and excavated material would include concrete, asphalt, and soil from the berms and embankments and the parking lot, of which approximately 115,000 cubic yards would be recycled and reused onsite. The Additional Housing Option would require approximately 108,000 cubic yards of cut and excavated material, which would be recycled and reused onsite. Graders, excavators, and dozers would be used to remove and redeposit soil on the project site. During Phase 0, excess soil would be stockpiled onsite on Blocks B and H. Under the Developer's Proposed Option only, the below-grade public parking garage on Blocks A and B would require excavation to a depth of approximately 20 feet at the beginning of Phase 2. Approximately 56,000 cubic yards of stockpiled and excavated soil would be exported at the beginning of Phase 2 over 2 months. Under the Additional Housing Option only, no below-grade public parking garage would be constructed and approximately 9,000 cubic yards of soil would be imported at the beginning of Phase 2. The maximum depth of excavation under the Additional Housing Option would be approximately 5 feet.

2.G.2 Construction Employment

The number of daily construction workers at the project site would vary over the course of construction, depending on the specific construction activities being performed, and overlap between block construction. The number of construction workers per day at the project site would range from an average 33 workers per day (during Phase 0 for both project options) to a maximum of 460 workers per day (during Phase 1 for the Additional Housing Option).

2.G.3 Construction Equipment and Staging

A variety of mobile and stationary construction equipment would be used at the project site during construction. Track/tire-mounted cranes and/or tower cranes would also be used for building construction, including but not limited to, precast or prefabricated erection, and building façades. Other mobile equipment such as excavators, graders, backhoes, loaders, dump trucks, compactors, pavers and forklifts would be used at the project site for a range of other construction tasks on the project site, including excavation, site clearing and grading, building construction, and/or hardscape and landscape materials installation. The construction equipment would be staged within the project site.

In order to minimize the need for exporting materials, a recycling facility would be located onsite during Phase 0 to crush and recycle asphalt, rock, and concrete from demolition of the berm and parking lot.

Project construction would also generate offsite truck trips for deliveries of concrete and other building materials, transportation of construction equipment to and from the site, hauling soils and debris from the site, and street sweepers. Miscellaneous stationary equipment would include generators, crushing and processing equipment, and cement and mortar mixers. A variety of smaller, mechanical equipment would also be used at the project site during the construction period, such as jackhammers/pavement breakers, saw cutters, chopping saws, tile saws, stud impact guns, impact drills, torque wrenches, welding machines, and concrete pumps.

2.G.4 Parking During Construction

On-site parking would be provided for construction worker vehicles throughout the construction period. During Phase 0, construction worker parking would be provided in areas not under construction. Public parking would not be available at the site during Phase 0 for safety reasons and due to mass grading and construction activities. During construction of Phase 1, unused portions of the site would be paved to allow surface vehicular parking until Phase 2 construction begins. The central park area of the site would also be available for construction worker parking during Phase 1 until it is constructed. During construction of Phase 2 and operation of Phase 1, on-street parking would be available along streets constructed during Phase 1; however, the public parking garage would not be yet available, as it would be under construction during Phase 2. Public parking would be accommodated in the public parking garage (under the Developer's Proposed Option), when it is completed.

2.G.5 Building Foundations

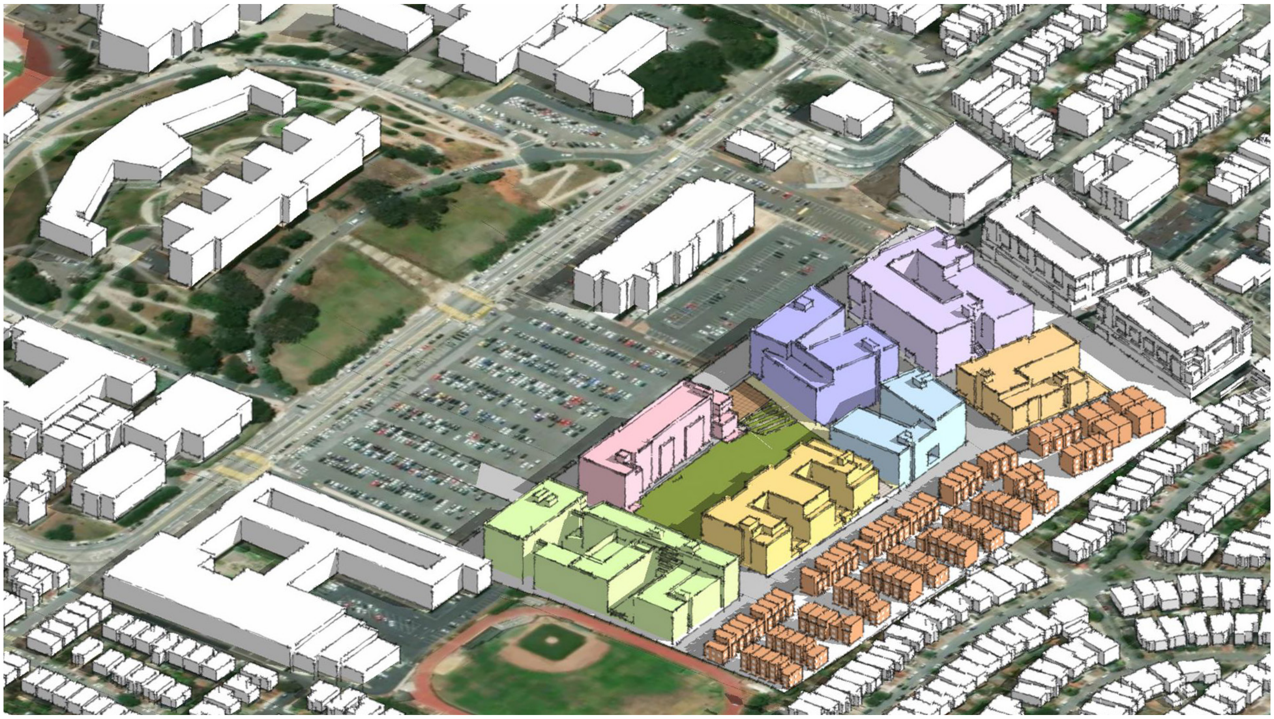
The proposed buildings are planned as type III or type V wood-framed construction[46] over a ground floor of type I reinforced-concrete construction[47] that would accommodate parking, amenity spaces, and in some cases residential units. The foundations for the townhomes, multifamily structures, and parking structures are anticipated to be of conventional spread footings. The project would not require pile driving.

2.H Graphic Exhibits of Proposed Project

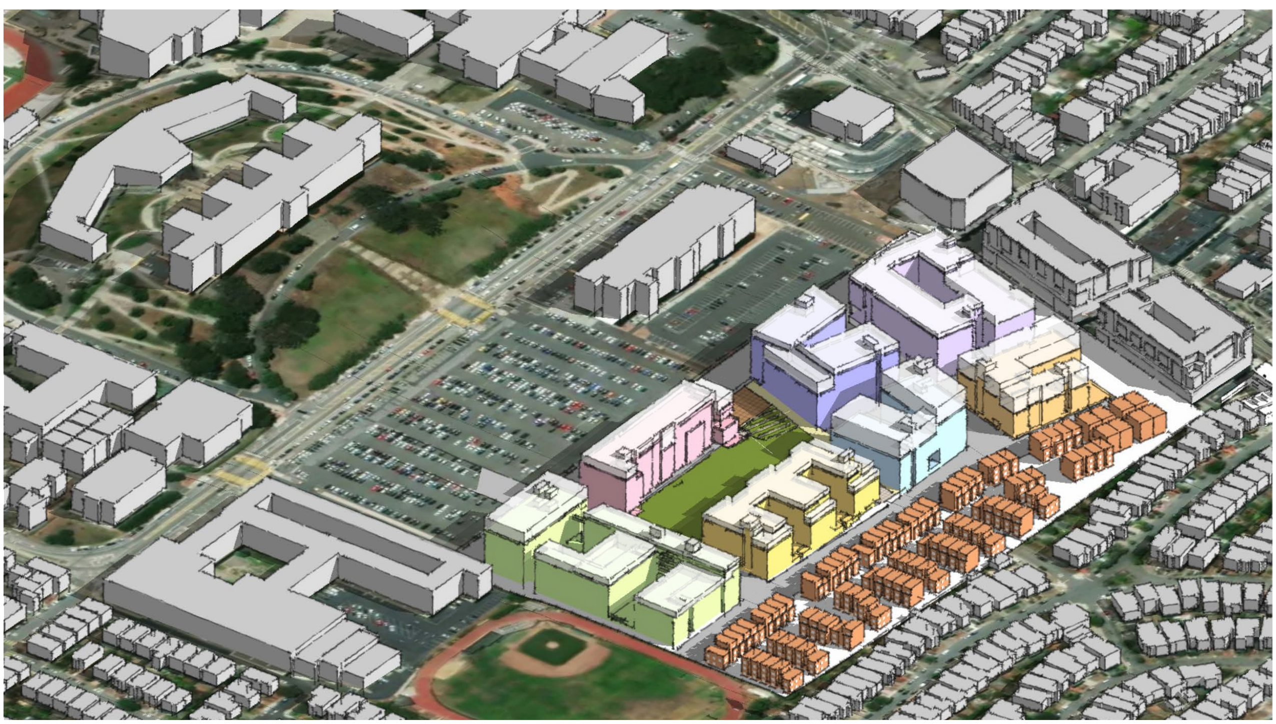
A number of graphic exhibits depicting the proposed project options are presented in **Figure 2-20, Aerial View of Project Looking Southeast**, through **Figure 2-25, View of Project Looking North from Unity Plaza**, for informational purposes. **Figure 2-21, Viewpoint Map**, shows the location and direction of **Figure 2-22 through Figure 2-25**. These figures are conceptual drawings of one potential massing scheme and do not represent the final design of the individual buildings. Detailed drawings and visual renderings of the buildings showing the proposed special use district massing controls, associated zoning map amendments, and design standards and guidelines for the site would be prepared for subsequent project approvals.

[46] *Type III* construction is defined as construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by the California Building Code. *Type V* construction is defined as construction in which the structural elements, exterior walls, and interior walls are of any materials permitted by the California Building Code.

[47] *Type I* construction is defined as construction in which the building primary structural frame, bearing walls, nonbearing walls and partitions, floor construction, and roof construction are of noncombustible materials, except as permitted in the California Building Code.



Developer's Proposed Option



Additional Housing Option

SOURCE: Van Meter Williams Pollack LLP, 2019

Figure 2-20
Aerial View of Project Looking Southeast

SOURCE: Van Meter Williams Pollack LLP, 2019; ESA, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 2-21
Viewpoint Map

Developer's Proposed Option

Additional Housing Option

SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 2-22
View of Project Looking West from Cloud Hall

Developer's Proposed Option

Additional Housing Option

SOURCE: Van Meter Williams Pollack LLP, 2019

Figure 2-23
View of Project Looking South from Montecito and Colon Avenues

Developer's Proposed Option

Additional Housing Option

SOURCE: Van Meter Williams Pollack LLP, 2019

Figure 2-24
View of Project Looking North from Lee and Lakeview Avenues

Developer's Proposed Option

Additional Housing Option

SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 2-25
View of Project Looking North from Unity Plaza

2.I Required Project Approvals

The proposed project is subject to review and approvals by several local, regional, state, and federal agencies. Certification of the final SEIR by the San Francisco Planning Commission, which would be appealable to the San Francisco Board of Supervisors, is required before any other discretionary approval or permits would be issued for the proposed project. The proposed project may require project approvals, recommendations, consents, and/or plan amendments from the following:

2.I.1 State and Regional Agencies

Regional Water Quality Control Board – San Francisco Bay Region

- Approval of Section 401 water quality certification
- Approval of General Construction Stormwater Permit

Bay Area Air Quality Management District

- Approval of any necessary air quality permits (e.g., Authority to Construct and Permit to Operate) for individual air pollution sources, such as emergency diesel generators

2.I.2 Local Agencies

San Francisco Board of Supervisors

- Approval of general plan amendments
- Approval of planning code amendments (SUD) and associated zoning map and height map amendments
- Approval of a development agreement
- Approval of final subdivision map
- Approval of dedications and easements for public improvements, and acceptance of public improvements, as necessary
- Agreement with City College of San Francisco for roadway access and any joint development of streets, if applicable

San Francisco Planning Commission

- Certification of the final SEIR
- Adoption of CEQA findings
- Approval of special use district design standards and guidelines
- Initiation and recommendation to the San Francisco Board of Supervisors to approve amendments to the general plan
- Initiation and recommendation to the San Francisco Board of Supervisors to approve planning code amendments adopting an SUD and associated zoning map amendments
- Recommendation to the San Francisco Board of Supervisors to approve a development agreement

San Francisco Public Utilities Commission or General Manager

- Actions and approvals related to a development agreement and a purchase and sale agreement, and other actions and approvals related to its jurisdictional authority

San Francisco Department of Public Works

- Actions and approvals related to its jurisdictional authority

San Francisco Municipal Transportation Agency

- Approval of transit improvements, public improvements and infrastructure, including certain roadway improvements, stop controls, bicycle infrastructure and loading zones, to the extent included in the project

San Francisco Fire Department

- Actions and approvals related to its jurisdictional authority

San Francisco Department of Building Inspection

- Approval and issuance of demolition, grading, and site construction permits
- Nighttime construction permit, if required

San Francisco Department of Public Health

- Actions and approvals related to its jurisdictional authority

City College of San Francisco

- Act as responsible agency under CEQA

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CHAPTER 3

Environmental Setting, Impacts, and Mitigation Measures

3.A Impact Overview

This subsequent environmental impact report (SEIR) chapter provides a project-level impact analysis of the potentially significant, physical environmental impacts of implementing the Balboa Reservoir project (proposed project) as described in SEIR Chapter 2, Project Description. The chapter focuses on those topics that were identified in the initial study (see SEIR Appendix B) with the potential to have either new significant effects or substantially more severe significant impacts than were previously identified in the Balboa Park Station Area Plan [Program] Environmental Impact Report (PEIR) due to implementation of the currently proposed project. Topics for which no new or more significant impacts were identified in the initial study are not analyzed in this chapter. Following this SEIR Section 3.A are Sections 3.B through 3.D, each presenting the impact analysis for the key resource topics identified in the initial study, as described below. Sections 3.B through 3.D each includes descriptions of the environmental setting and regulatory framework; assessments of project impacts (i.e., offsite, onsite, construction-related, operational, direct, and indirect impacts) and cumulative impacts; and identification of mitigation measures that would reduce or avoid identified significant environmental impacts.

This section describes the scope of analysis in the initial study and this SEIR and explains the format and basis for the impact analysis for all resource topics, including the cumulative impact analysis.

3.A.1 Scope of Analysis

Initial Study

As described in SEIR Chapter 1, Introduction, the San Francisco Planning Department (the planning department) determined that an EIR is required for the proposed project in compliance with California Environmental Quality Act (CEQA) and published a notice of preparation (NOP) (see SEIR Appendix A). As part of the preparation of this SEIR, the planning department identified several resource topics that could be adequately addressed in an initial study and determined that many of the topics were adequately analyzed in the PEIR such that the proposed project would have no new significant impacts or no substantially more severe significant impacts than those previously found significant. In some cases, the initial study identified mitigation measures in these topic areas that would reduce potentially significant impacts to a less-than-significant level to support the determination that under these resource areas, the proposed project would have no new significant impacts or no substantially more severe significant impacts than those previously identified in the PEIR. Therefore, the topics addressed in the initial study are listed below and are not analyzed in this SEIR chapter.[48] Also shown are abbreviations for each resource topic that are used in the naming of impact statements and mitigation measures:

- Section E.1: Land Use and Land Use Planning (LU)
- Section E.2: Aesthetics (AE)
- Section E.3: Population and Housing (PH)
- Section E.4: Cultural Resources (CR)
- Section E.5: Tribal Cultural Resources (TC)
- Section E.9: Greenhouse Gas Emissions (GG)
- Section E.10: Wind (WI)
- Section E.11: Shadow (SH)
- Section E.12: Recreation (RE)
- Section E.13: Utilities and Services Systems (UT)
- Section E.14: Public Services (PS)
- Section E.15: Biological Resources (BI)
- Section E.16: Geology and Soils (GE)
- Section E.17: Hydrology and Water Quality (HY)
- Section E.18: Hazards and Hazardous Materials (HZ)
- Section E.19: Mineral Resources (MR)
- Section E.20: Energy (EN)
- Section E.21: Agriculture and Forest Resources (AG)
- Section E.22: Wildfire (WF)

Refer to the initial study in SEIR Appendix B for a discussion and the impact analysis of the proposed project with respect to these resource topics.

SEIR Topics

The resource topic areas addressed in this SEIR chapter are listed below, and the abbreviations for each resource topic that are used in the naming of impact statements and mitigation measures are shown in parentheses:

- Section 3.B: Transportation and Circulation (TR)
- Section 3.C: Noise (NO)
- Section 3.D: Air Quality (AQ)

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[48] As described in SEIR Chapter 1, Introduction, and in the initial study, impacts related to aesthetics are not analyzed in this initial study or this SEIR because, under CEQA (Public Resources Code section 21099), aesthetics impacts of a mixed-use or employment center project on an infill site located within a transit priority area are not to be considered significant impacts; therefore, no impact analysis is required.

Aesthetics and Parking Analysis

CEQA section 21099(d) states that "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."[49] Accordingly, aesthetics and parking are not considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

1. The project is in a transit priority area;[50]
2. The project is on an infill site;[51] and
3. The project is residential, mixed-use residential,[52] or an employment center.[53]

The two proposed project options and the project variants all meet each of the above three criteria because the project site is (1) located within 0.5 mile of several Municipal Railway (Muni) transit lines and the Balboa Park Bay Area Rapid Transit (BART) station; (2) located on an infill site that is developed as surface parking, and adjacent to residential and mixed uses; and (3) would include residential, retail, and community center and childcare uses meeting the definition of a mixed-use residential project.[54] Thus, this SEIR does not consider aesthetics and the adequacy of parking in determining the significance of project impacts under CEQA.

CEQA section 21099(e) states that a lead agency may consider aesthetic impacts under local design review ordinances or other discretionary powers and that aesthetics impacts do not include impacts on historical or cultural resources. Therefore, there is no change in the planning department's methodology related to design review or impacts on historical resources.

The planning department recognizes that the public and decision makers nonetheless may be interested in information pertaining to the aesthetic effects of a proposed project, and may desire that such information be provided as part of the environmental review process. Therefore, some of the information that would have otherwise been provided in an aesthetics section of an EIR (such as visual depictions of the proposed project) is included in SEIR Chapter 2, Project Description.

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49 Refer to CEQA section 21099(d)(1).

50 CEQA section 21099(a)(7) defines a *transit priority area* as an area within 0.5 mile of an existing or planned major transit stop. A *major transit stop* is defined in CEQA section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

51 CEQA section 21099(a)(4) defines an *infill site* as a lot located within an urban area that has been previously developed, or a vacant site where at least 75 percent of the perimeter of the site adjoins, or is *separated* only by an improved public right-of-way from, parcels that are developed with qualified urban uses.

52 CEQA section 21159.28(d) defines a *mixed-use residential* project as a project where at least 75 percent of the total building square footage of the project consists of residential use or a project that is a transit priority project as defined in CEQA section 21155. CEQA section 21155 defines *transit priority project* as a project that (1) contains at least 50 percent residential use, based on total building square footage and, if the project contains between 26 percent and 50 percent nonresidential uses, a floor-area ratio of not less than 0.75; (2) provides a minimum net density of at least 20 dwelling units per acre; and (3) is within 0.5 mile of a major transit stop or high-quality transit corridor included in a regional transportation plan.

53 CEQA section 21099(a)(1) defines an *employment center* as a project located on property zoned for commercial uses with a floor-area ratio of no less than 0.75 and located within a transit priority area.

54 San Francisco Planning Department, *Eligibility Checklist: CEQA Section 21099—Modernization of Transportation Analysis, Balboa Reservoir Project*, November 15, 2018.

However, this information is provided solely for informational purposes and is not used to determine the significance of the environmental impacts of the project, pursuant to CEQA.

Similarly, the planning department acknowledges that parking conditions may be of interest to the public and the decision makers. Therefore, the initial study presents secondary environmental impacts related to City College in Appendix B, Initial Study, Section E.14, Public Services.

Automobile Delay and Vehicle Miles Traveled

CEQA section 21099(b)(1) requires that the California Governor's Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of 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 CEQA Guidelines for determining transportation impacts under CEQA section 21099(b)(1), automobile delay, as described solely by *level of service* or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA.

In January 2016, OPR published for public review and comment a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (Proposed Transportation Impact Guidelines) recommending that transportation impacts for projects be measured using a *vehicle miles traveled* (VMT) metric. VMT measures the amount and distance that a project might cause people to drive, accounting for the number of passengers within a vehicle. These proposed transportation impact guidelines provide substantial evidence that VMT is an appropriate standard to use in analyzing transportation impacts to protect environmental quality and a better indicator of GHG, air quality, and energy impacts than automobile delay. Acknowledging this, San Francisco Planning Commission resolution 19579, was issued on March 3, 2016, which:

- Found that automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall no longer be considered a significant impact on the environment pursuant to CEQA because it does not measure environmental impacts and, therefore, does not protect environmental quality.
- Directed the Environmental Review Officer to remove automobile delay as a factor in determining significant impacts under CEQA for all guidelines, criteria, and list of exemptions, and to update the Transportation Impact Analysis Guidelines for Environmental Review and Categorical Exemptions from CEQA to reflect this change.
- Directed the Environmental Planning Division and Environmental Review Officer to replace automobile delay with VMT criteria, which promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses; and consistent with proposed and forthcoming changes to the CEQA Guidelines by the OPR.

Planning commission resolution 19579 became effective immediately for all projects that had not received a CEQA determination and all projects that had previously received CEQA determinations but require additional environmental analysis. In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing Senate Bill 743 (CEQA Guidelines section 15064.3).

Accordingly, this SEIR does not contain a discussion of automobile delay impacts based on level of service criteria. Instead, a VMT and induced automobile travel impact analysis is provided in SEIR Section 3.B, Transportation and Circulation. Nonetheless, automobile delay may be considered by decision makers, independent of the environmental review process, as part of their decision to approve, modify, or disapprove the proposed project.[55]

3.A.2 Overall Approach to Impact Analysis

The impact analysis for all resource topics is based on the detailed, project-specific information presented in SEIR Chapter 2, Project Description. The analysis includes consideration of environmental impacts associated with both construction and operation of the proposed project. Construction-related activities would be confined within the duration of the construction period. Operational impacts would cover the long-term effects associated with the full use of the project structures and features following completion of construction.

As described in SEIR Chapter 1, Introduction, this SEIR is a project-level EIR that is tiered from a previously certified program-level EIR, namely the PEIR. As a project-level EIR and consistent with CEQA Guidelines section 15125(a), the impact analysis is generally based on potential physical effects of the project compared to existing or baseline conditions of the physical environment at the project site at the time of publication of the NOP, which was in October 2018.

As a subsequent EIR to the PEIR certified in 2008, this SEIR, including the initial study, identifies and considers all mitigation measures that were identified in the PEIR and determines their applicability to the currently proposed project. In some cases, mitigation measures have already been implemented, either in their entirety or in part, in which case those measures are considered part of the existing conditions. Otherwise, the impact analysis in this SEIR, including the initial study, does not assume that all mitigation measures from the PEIR would be implemented as part of the proposed project. Instead, this SEIR and initial study impact analysis determines if the mitigation measures from the PEIR would apply to the proposed project and would still be considered appropriate, in which case those PEIR mitigation measures are reiterated and modified to reflect latest standards or the conditions of the project as project-level mitigation measures for the proposed project. SEIR Appendix H lists all of the mitigation measures from the PEIR and indicates which measures are applicable to the proposed project.

In addition, because this SEIR is also a subsequent EIR to the PEIR, the impact analysis also considers the following:

- Changes in the CEQA Guidelines since the PEIR was certified in 2008;
- Whether the proposed project includes substantial changes from what was analyzed in the PEIR;
- Whether substantial changes have occurred with respect to the circumstances under which the project is undertaken compared to what was assumed in the PEIR; and

[55] The project sponsor has prepared additional transportation studies independent of the CEQA process. These include parking monitoring and utilization, traffic operations (corridor and intersection delay), and shuttle operations (service/ridership feasibility assessment).

- Whether new information of substantial importance, which was not known and could not have been known at the time of certification of the PEIR, would affect the impact analysis.

Thus, the project impacts are also analyzed with regard to the potential for the proposed project to contribute to *new* significant impacts or substantially *more severe* significant impacts than those identified as significant in the PEIR.

3.A.3 Organization of the Impact Analyses

Each of the resource areas in this chapter includes the following elements:

- **Introduction.** This section summarizes the applicable topic analysis and its relevance to the proposed project.
- **Summary of the PEIR Section.** This section summarizes how the topic was addressed in the PEIR as it related to the Balboa Reservoir site, including identifying any applicable mitigation measures from the PEIR and conclusions reached regarding significance of effects.
- **Environmental Setting.** This section describes the existing physical conditions of the project site and surroundings relevant to that resource topic when the NOP was issued on October 10, 2018, in sufficient detail and breadth to allow a general understanding of and basis for the environmental impacts of the proposed project.
- **Regulatory Framework.** This section describes the relevant federal, state, and local regulatory requirements that are directly applicable to the environmental topic being analyzed.
- **Impacts and Mitigation Measures.** This section evaluates the potential for the proposed project to result in adverse effects on the physical environment described in the setting. It identifies the significance of each impact (see definitions below) based on topic-specific significance criteria. For impacts determined to be significant, the impact analysis identifies feasible mitigation measures that would avoid or reduce the severity of the identified impact. The analysis describes all mitigation measures applicable to the proposed project, whether they are the same as those specified in the PEIR, are updated measures, or new mitigation measures. The project sponsor—Reservoir Community Partners LLC—has reviewed the identified mitigation measures and has agreed to implement them if the project is approved.

  The "Impacts and Mitigation Measures" section is further subdivided into the following:

  – **Significance Criteria.** This section lists the criteria specific to each resource topic used to identify and determine significant environmental effects of the proposed project. Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment. The guidelines implementing CEQA direct that this determination be based on scientific and factual data, including the entire record for the project, and not on argument, speculation, or unsubstantiated evidence. The significance criteria used in this EIR are based on planning department guidance used to assess the severity of environmental impacts of the proposed project. It is based on CEQA Guidelines Appendix G, with procedures as set forth in San Francisco Administrative Code chapter 31.10.

  – **Approach to Analysis.** This section describes the general approach and methodology used to apply the significance thresholds in evaluating the impacts of the project. The methodology for applying significance criteria provides the basis for the impact analysis, which could be either qualitative or quantitative, depending on the specific impact. The methodology identifies use of applicable regulatory guidelines, thresholds, standards, or accepted professional practices or protocols used to assess construction, operational, and cumulative impacts.

- **Impact Evaluation.** This section presents the project-specific analyses of impacts of the proposed project, with specific impact areas discussed under individually numbered impact statements. Each of the numbered impact statements is followed by a discussion and analysis of the various components of the proposed project with potential for physical environmental effects. The conclusion of each impact analysis is expressed in terms of the impact significance, which is discussed below. For significant or potentially significant impacts, the impact discussion identifies feasible mitigation measures, numbered corresponding to the impact number. The numbering of the mitigation measures corresponds with the number of the impact statement to which the measure applies, with a prefix of "M." Following the impact evaluation, there is a qualitative comparison of the impact conclusions in this SEIR with the comparable impact conclusion from the PEIR.
- **Cumulative Impacts** considers the effects of the proposed project together with potential effects of other reasonably foreseeable future projects within the same geographic scope as the project's impacts. The analysis of cumulative impacts under each resource topic is based on the same setting, regulatory framework, and significance thresholds as the direct impacts. Additional mitigation measures are identified if the analysis determines that the project's contribution to a cumulative, adverse impact would be considerable (i.e., significant). The overall assumptions to the cumulative impact analysis for all topics are described in SEIR Section 3.A.6, Approach to Cumulative Impact Analysis, p. 3.A-8.

3.A.4 Significance Determinations

For each impact statement and analysis, the impact evaluation provides a conclusion of the impact significance, which is designated as one of the following:

- **No Impact.** This determination is reached if there is no potential for impacts or the environmental resource does not occur within the project area or the area of potential effects.
- **Less-than-Significant Impact.** This determination applies if the impact does not exceed the defined significance criterion or would be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations. No mitigation is required for impacts determined to be less than significant.
- **Less-than-Significant Impact with Mitigation.** This determination applies if the project would or could result in a significant or potentially significant adverse effect when evaluated with respect to one or more significance criteria, but feasible mitigation is available that would effectively reduce the impact to a less-than-significant level.
- **Significant and Unavoidable Impact with Mitigation.** This determination applies if the project would result in a significant adverse effect that exceeds the defined significance criterion, and although feasible mitigation might lessen the severity of the impact, the residual impact would still exceed the defined significance criteria. Thus, even with implementation of feasible mitigation, the impact would be significant, and therefore, unavoidable.
- **Significant and Unavoidable Impact.** This determination applies if the project would result in a significant adverse effect that exceeds the defined significance criterion, and there is no feasible mitigation available to lessen the severity of the impact. Therefore, the impact would be significant and unavoidable.

3.A.5 Mitigation Measures

Mitigation measures are identified in each resource topic, where feasible, for impacts considered significant consistent with CEQA Guidelines section 15126.4, which states that an EIR "shall describe feasible measures which could minimize significant adverse impacts." CEQA requires that a mitigation measure has an essential nexus and be roughly proportional to the significant effect identified in the EIR. Pursuant to CEQA Guidelines section 15126.4, mitigation measures are not required for environmental impacts that are not found to be significant.

3.A.6 Approach to Cumulative Impact Analysis

CEQA Requirements for Cumulative Impact Analysis

Cumulative impacts, as defined in CEQA Guidelines section 15355, refer to two or more individual effects that, when taken together, are "considerable" or that compound or increase other environmental impacts. A cumulative impact from several projects is the change in the environment that would result from the incremental impact of the project added to the impacts of other reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in CEQA Guidelines section 15130:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (e.g., the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current, and probable future projects, including those outside the control of the lead agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.
- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

Approach to Cumulative Impact Analysis

The cumulative impact analysis for each individual resource topic is described in each section of this chapter, immediately following the description of the direct project impacts and identified mitigation measures. Cumulative impacts are numbered sequentially, starting with the number "1" and preceded by "C-" (such as "Impact C-TR-1" for the first cumulative transportation impact).

Similar to the project impacts, cumulative impacts are also analyzed with regard to the potential for the proposed project to contribute to new significant cumulative impacts or substantially more severe cumulative impacts than those identified as significant in the PEIR. The PEIR used the year 2025 for the analysis of the buildout of the plan area as well as for the cumulative impacts analysis, and cumulative impacts were assessed on the basis of regional population and employment projections for the year 2025 as determined by the Association of Bay Area Governments.

Two approaches to a cumulative impact analysis are provided in CEQA Guidelines section 15130(b)(1): (a) the analysis can be based on a list of past, present, and probable future projects producing related or cumulative impacts; or (b) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The projections model includes individual projects and applies a quantitative growth factor to account for other growth that may occur in the area.

The analyses in this SEIR, including the initial study, employ both the list-based approach and a projections-based approach, depending on which approach best suits the individual resource topic being analyzed. For instance, the land use analysis in Appendix B, Initial Study, Section E.1, Land Use and Land Use Planning, considers individual projects that are anticipated in the project site vicinity that may alter land use conditions in the area. By comparison, the cumulative vehicle miles traveled analysis and the cumulative traffic noise analysis rely on a citywide growth projection model that extends to 2040 that also encompasses other reasonably foreseeable projects, which is the typical methodology the planning department applies to analysis of these impacts. The cumulative air quality (operational health risks) analysis also relies on growth projections; in this case, the Planning Department undertook citywide air quality modeling for 2040 that accounts for both anticipated traffic increases and implementation of vehicle emission regulations. Certain other analyses, such as construction noise and construction health risks, which are more localized in nature, rely on the project list included in this section.

For the list-based approach, projects or plans that are relevant to the cumulative analysis include those that could contribute incremental effects on the same environmental resources and would have similar environmental impacts as those discussed in this SEIR. The following factors were used to determine an appropriate list of projects to be considered in the near-term cumulative impact analysis:

- **Similar Environmental Impacts.** A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project or plan is defined as one that is "reasonably foreseeable," such as a proposed project for which an application has been filed with the approving agency or has approved funding, or an approved plan that amended the land use controls applicable to an adjacent neighborhood.
- **Geographic Scope and Location.** A relevant project is located within the defined geographic scope for the cumulative effect.
- **Timing and Duration of Implementation.** Effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with the effects of the proposed project.

For the resource topics using the list-based approach, **Table 3.A-1, Cumulative Projects within a 0.5-Mile Radius of the Project Site**, presents a comprehensive list of cumulative development projects generally located within 0.5 mile of the project site that are considered in the various cumulative analyses. The table identifies cumulative projects and their status as of the date of the NOP (October 10, 2018), and provides a figure key, **Figure 3.A-1, Cumulative Projects within a 0.5-Mile Radius of the Project Site,** which shows the location of these projects relative to the proposed project site. In order to differentiate the status of these projects at the time of the NOP, the table includes a column to list each project's status. In general, these cumulative projects are either under construction, which means they were "under construction" at the date of the NOP; "building permit approved," meaning the project has permits necessary to start construction but has not yet started construction; and "under environmental review," in which case, the project has an application on file with the planning department.

The cumulative projects list includes the City College of San Francisco Facilities Master Plan, which provides a plan for facilities development over the next 10 years at the Ocean Campus, eight City College centers distributed throughout the city, and various other instructional sites throughout San Francisco. The space needed in buildings for City College's programmatic needs are based on state standards for space, current and future enrollment, existing space, and current utilization of existing facilities at City College's sites. The master plan is based on forecasted enrollment of 62,518 students in 2026 (34,200 full-time-equivalent students).[56] This represents an increase of approximately 55 percent in enrollment from the 40,605 students (22,100 full-time equivalents) in 2018.

Table 3.A-2, City College Ocean Campus Projects, presents a potential list of projects by type (renovation, new facilities, etc.) considered by City College for Ocean Campus. The City College Board of Trustees adopted the facilities master plan in March 2019.[57] The recommendations for the Ocean Campus in the master plan are shown in Table 3.A-2 under the "Facilities Master Plan" column. These recommended projects would occur within three phases: years 1–5, years 6–10, and future phases.[58] In April, 2019, the City College Board of Trustees authorized a contract to conduct CEQA compliance services for the master plan.[59] City College would act as the CEQA lead agency to prepare for the environmental review of the master plan projects. The Ocean Campus master plan projects would undergo individual environmental review.

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56 City College of San Francisco, *Facilities Master Plan Final Draft*, March 18, 2019, p. 3-4, *https://www.ccsf.edu/dam/Organizational_Assets/About_CCSF/Admin/facilities_planning/2017FMP/20190318/FMP_03182019_3Enrollment.pdf*, accessed June 7, 2019.

57 City College of San Francisco, *Agenda Item 11F, Facilities Master Plan (FMP) Approval*, March 21, 2019, *http://go.boarddocs.com/ca/ccsf/Board.nsf/goto?open&id=B7C2MM80CD17*, accessed June 7, 2019.

58 City College of San Francisco, *Facilities Master Plan Final Draft*, March 18, 2019, p. 4-54, *https://www.ccsf.edu/dam/Organizational_Assets/About_CCSF/Admin/facilities_planning/2017FMP/20190318/FMP_03182019_4Recommendations.pdf*, accessed June 7, 2019.

59 City College of San Francisco, *Agenda Item 10H, Authorization to execute a contract with Impact Sciences to provide California Environmental Quality Act (CEQA) Compliance Services to the District from May 1, 2019 through December 31, 2020*, April 25, 2019, *http://go.boarddocs.com/ca/ccsf/Board.nsf/goto?open&id=BAX6YJ7208A5*, accessed June 7, 2019.

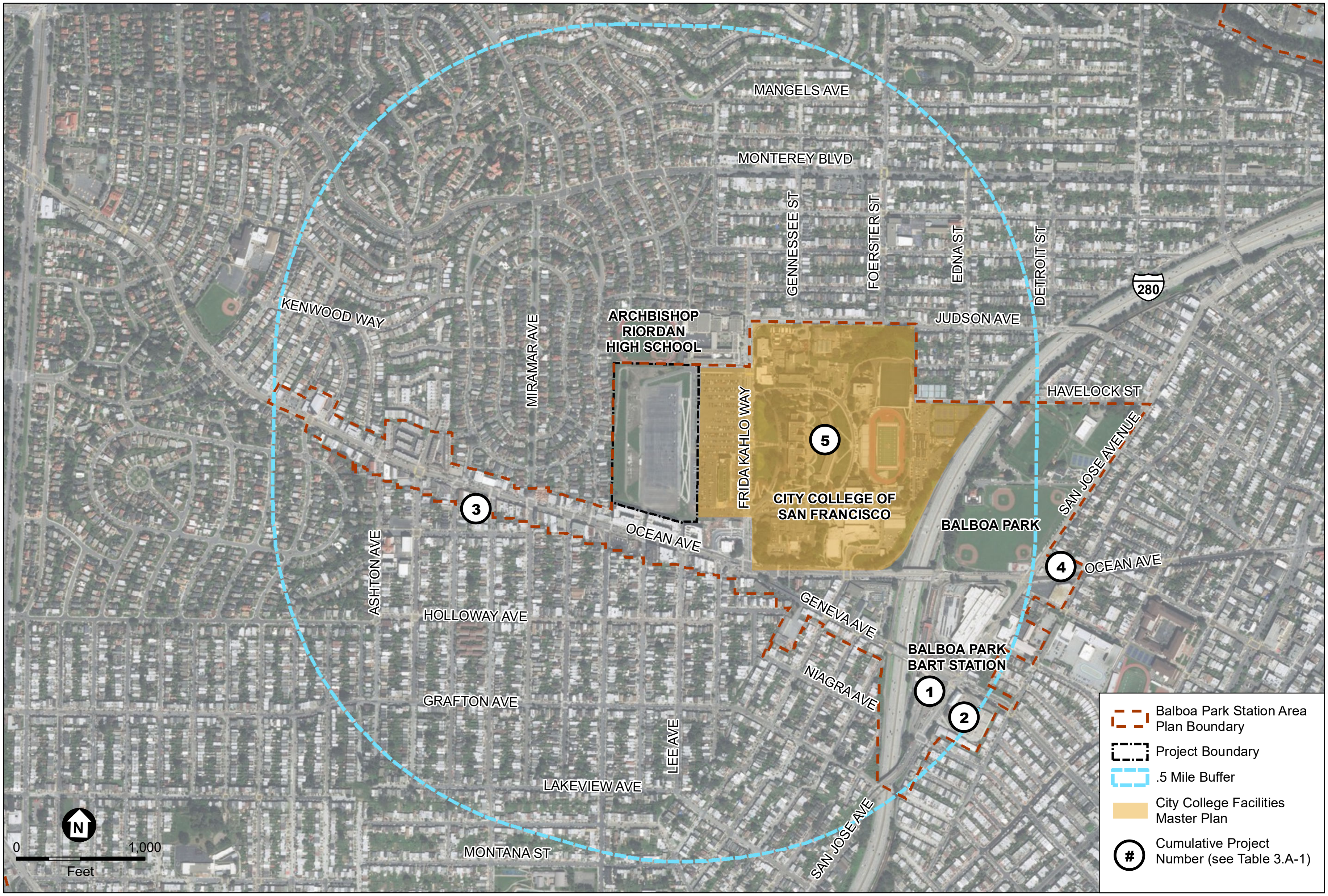
TABLE 3.A-1
CUMULATIVE PROJECTS WITHIN A 0.5-MILE RADIUS OF THE PROJECT SITE

Map Key No.	Project Name (Case File No.)	Status as of February 2019	Dwelling Units	Commercial/ Retail (gsf)	Community/ Institutional (gsf)	Child Care (gsf)
1	2340 San Jose Avenue (Upper Yard) (2017-012151PRJ)	Building permit issued	131	3,900	2,900	4,000
2	2301 San Jose Avenue (Geneva Office Building – Geneva Car Barn and Powerhouse) (2012.0262E)	Under construction			19,900	
3	1601–1631 Ocean Avenue and 1271 Capitol Avenue (2009.1050ENV)	Under environmental review	54	5,869		
4	350 Ocean Avenue (2017-001961ENV)	Under environmental review	24	1,226		
5	City College Facilities Master Plan[a]	Plan adopted – environmental review not yet conducted			Unknown	
		Total[b,c]	**209**	**10,995**	**22,800**	**4,000**

SOURCES: San Francisco Planning Department, 2019; City College of San Francisco, 2019; Kitchell, 2019.

NOTES:

a City College approved a facilities master plan in March 2019. Refer to the facilities master plan and Table 3.A-2 below for more details on projects included.
b Transportation network improvements are not included in this table but are addressed in SEIR Section 3.B, Transportation and Circulation.
c Smaller projects such as conversions and accessory dwelling units are not included within the 0.5-mile buffer.



SOURCE: DataSF, 2018; ESA, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 3.A-1
Cumulative Projects within a 0.5-Mile Radius of the Project Site

TABLE 3.A-2
CITY COLLEGE OCEAN CAMPUS PROJECTS

Type of Project Listed[a]	Facilities Master Plan[b,c]	Bond Measure[d]
Swing Space (for temporary occupancy during construction or renovation)	• Swing Space Bungalows • Swing Space for Student Services in Multi-Use Building	• Portable Village/Temporary Campus
Renovation	• Cloud Hall Modernization • Batmale Renovation • Science Hall Modernization • Student Union Renovation • Bookstore Annex • Campus Police Complex	• Cloud Hall Renovation • Science Hall Renovation • Turf Field Replacement
New Facilities	• Performing Arts and Education Center • Central Utility Plant[e] • Science, Technology, Engineering, Art, and Math (STEAM) Complex • Student Development Center • Childcare Center • Parking Structure (east basin) • East Surface Parking	• Central Utility Plant[e] • STEAM Building • Student Development • Childcare Center • Diego Rivera Theater • Multi Media Building
Future or Alternative Sites	• Near STEAM Complex • Near MUC and PAEC	None identified
Demolition	• Bungalows #22, 24, 25, 29, 35, 42, 45, 46, 47, 48, 49, 50, 51) • Conlan Hall #19 • Creative Arts Building #5 • Creative Arts Extension Building #6 • Existing Orfalea Child and Family Center #33 • Smith-Statler Building #15 • Visual Arts Building #7	• Bungalows • Conlan • Creative Arts Extension • Existing Childcare Building • Smith and Statler

NOTE:

[a] City College Ocean Campus projects were identified using different naming conventions. For example, the facilities master plan refers to the STEAM Complex, while the bond measure projects list refers to the STEAM Building.

SOURCES:

[b] City College of San Francisco, Facilities Master Plan Final Draft, March 18, 2019, p. 4-34, *https://www.ccsf.edu/dam/Organizational_Assets/About_CCSF/Admin/facilities_planning/2017FMP/20190318/FMP_03182019_4Recommendations.pdf*, accessed June 7, 2019.

[c] City College of San Francisco, *Request for Proposal for RFQ/P 2019-238 California Environmental Quality Act (CEQA) Compliance Services for Facilities Master Plan (FMP)*, p. 5, *https://www.ccsf.edu/dam/Organizational_Assets/About_CCSF/Admin/facilities_planning/PlanningConstruction/ProfessionalServices/RFQP2019-238/RFQ-P%202019-238_FMP%20CEQA_Consultant_Final_%2003.21.2019.pdf*, accessed June 7, 2019. The RFQ/P identified the following facilities master plan projects for CEQA review: Cloud Hall Renovation, Batmale Renovation, Science Hall Renovation, Student Union Renovation, Bookstore Annex Renovation, Police Station Renovation, new STEAM Complex, new Student Development Center, and new Childcare Center.

[d] Kitchell, Board Presentation: Project List Review, May 30, 2019, *https://go.boarddocs.com/ca/ccsf/Board.nsf/files/BCP4CJ73ABFC/$file/7.%20D.pdf*, accessed June 7, 2019.

[e] Impact Sciences, Inc. City College of San Francisco Ocean Avenue (Main) Campus Infrastructure Final Initial Study/Mitigated Negative Declaration was adopted and project approved at the May 30, 2019 Board of Trustees meeting. *https://go.boarddocs.com/ca/ccsf/Board.nsf/files/BCP4CJ73ABFC/$file/7.%20D.pdf*, accessed June 14, 2019.

At subsequent 2019 Board of Trustees meetings, City College staff presented a facilities planning update on a potential bond measure that would be anticipated to fund construction of the facilities master plan projects, shown under the “Bond Measure” column in Table 3.A-2. In that update, a number of the facilities master plan projects were included in the list of potential bond-funded improvements. However, the East Basin Parking Garage was no longer included, the Performing Arts and Education Center was replaced by a new Diego Rivera Theater and a smaller STEAM building (both on the east basin), and a Multi Media Building was proposed at the location of the existing Creative Arts Extension Building. The bond presentation also suggested replacement of the turf on the college’s football field. Also included were expenditures at other City College facilities, including renovation of Evans Center in the Bayview District, improvements at other neighborhood centers, and infrastructure upgrades to system wide City College facilities.[60,61] If approved, the bond measure will go before voters in March 2020.[62]

At the time of this SEIR preparation, the project description detail for the facilities master plan projects for the Ocean Campus is limited, City College may change those projects or their details depending on funding availability, and City College has not conducted CEQA analysis for those projects. Therefore, the cumulative analysis for this SEIR will qualitatively assess the impacts of these Ocean Campus projects identified in Table 3.A-2 collectively as the “City College Facilities Master Plan” using best available information at the time of this SEIR preparation.

As an agency of the state, City College of San Francisco is not required to comply with the local zoning ordinances, regulations, and ordinances of a county or city.[63] Differences in applicable regulations for the City College projects are described in the cumulative impact analysis where appropriate.

Each cumulative impact analysis considers the projects listed in Table 3.A-1 as appropriate to the resource topic. Each section identifies which of the cumulative projects could contribute to a cumulative impact on that specific resource and why. Not all projects on the list apply to every cumulative analysis.

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[60] City College of San Francisco, *Agenda Item 7D, Update on Facilities Bond Project List 1. BMWL Presentation*, May 30, 2019, *http://go.boarddocs.com/ca/ccsf/Board.nsf/goto?open&id=B7C2U580DE7B*, accessed June 7, 2019.

[61] Kitchell, *Board Presentation: Project List Review, May 30, 2019, https://go.boarddocs.com/ca/ccsf/Board.nsf/files/BCP4CJ73ABFC/$file/7.%20D.pdf*, accessed June 7, 2019.

[62] City College of San Francisco, *Agenda Item 9C, Authorization of a Facilities Bond Ballot Initiative for the Election on March 3, 2020, in the amount of $845,000,000*, June 27, 2019, *https://go.boarddocs.com/ca/ccsf/Board.nsf/goto?open&id=B7C2XF80E94D*, accessed July 18, 2019.

[63] California Government Code section 53094.

3.B Transportation and Circulation

3.B.1 Introduction

This section presents the existing transportation and circulation conditions and analyzes the potential project-level and cumulative impacts on transportation and circulation during construction and operation of the project. Transportation and circulation topics consist of walking, bicycling, driving hazards, transit, emergency access, vehicle miles traveled (VMT), and loading. Supporting detailed technical information is included in Subsequent Environmental Impact Report (SEIR) Appendix C, Transportation Supporting Information.

3.B.2 Summary of Comments Received in Response to the Notice of Preparation

The following transportation-related topics were raised in response to the notice of preparation of the SEIR:

- Increased traffic volumes and congestion along Frida Kahlo Way, Ocean Avenue, and Lee Avenue;
- Alternative vehicular access at San Ramon Avenue or at the San Francisco Public Utilities Commission (SFPUC) open space;
- Pedestrian and bicycle safety along Frida Kahlo Way and Ocean Avenue;
- Effects of transportation network companies (TNCs) and delivery vehicles;
- Parking loss and increased demand for parking in nearby on-street spaces and off-street facilities;
- Increased transit ridership and effect of the proposed project on transit reliability and frequency; and
- Emergency access.

Comments and topics related to the proposed project's physical environmental impacts are addressed in the following sections.

3.B.3 Summary of Balboa Park Station Area Plan PEIR Transportation Section

Balboa Park Station Area Plan PEIR Setting

The transportation and circulation setting section of the Balboa Park Station Area Plan PEIR (area plan PEIR, or PEIR) provided information on the transportation facilities and system serving the plan area. The transportation network includes the system of local streets, ramps and freeways, local and regional bus and rail lines, bicycle and pedestrian facilities, and parking and loading areas. The Balboa Park Station Area Plan (area plan) includes a number of projects that would affect areawide transportation-related conditions, including the street network, transit operations, and parking supply. The PEIR is a program-level EIR that analyzed the impacts of the proposed transportation and land use changes, and a project-level EIR that analyzed development of two individual projects within the plan area: the Phelan Loop Site (now 1100 Ocean Avenue) and the Kragen Auto Parts Site (now 1150 Ocean Avenue, which includes the Whole Foods Grocery Store). Additionally, the PEIR included analysis of a Lee Avenue Connection to City College of San Francisco (City College) variant that evaluated provision of vehicular access to City College parking facilities through Lee Avenue.

The plan area consists primarily of the parcels surrounding the Balboa Park Station along Geneva, Ocean, and San Jose avenues. The plan area is subdivided into four subareas: (1) Transit Station Neighborhood, which includes the major regional transit facilities of the plan area, as well as Balboa Park; (2) Ocean Avenue Neighborhood Commercial District, which extends along Ocean Avenue from Frida Kahlo Way (formerly Phelan Avenue) west to Manor Drive; (3) the main campus of City College;[64] and (4) Balboa Reservoir site.

The San Francisco County Transportation Authority (SFCTA) countywide travel demand was used to develop the travel forecasts for future 2025 Baseline conditions without implementation of the area plan. The SFCTA travel demand model used in the analysis incorporates Association of Bay Area Governments (ABAG) land use and socio-economic database and growth forecasts for the year 2025 (*Projections 2002*). The San Francisco Planning Department made adjustments to the growth projections to reflect the City's emphasis on housing production, including the Balboa Park Station Area Plan and other Better Neighborhoods planning efforts. The adjusted housing and employment projections were the basis for the travel demand forecasts for the PEIR. The development scenario used in the SFCTA travel demand model for the PEIR concentrated housing growth in the Better Neighborhoods areas, including the Balboa Park Station Area Plan, and therefore provides a conservative estimate of the travel demand and impacts associated with implementation of the area plan.

The 2025 with Area Plan scenario included both proposed land use and transportation changes that would occur with implementation of the Balboa Park Station Area Plan. For the 2025 with Area Plan scenario, new vehicle and transit trips generated by the development within the plan area were estimated and manually added to the 2025 Baseline traffic volumes at each study intersection and to the 2025 Baseline transit ridership projections.

Balboa Park Station Area Plan PEIR Impacts and Mitigation Measures

Transportation and circulation impacts assessed in the PEIR included the Balboa Reservoir site as part of numerous other parcels analyzed. The PEIR identified program-level impacts related to implementation of the area plan and project-level impacts related to development of the 1100 Ocean Avenue (former Phelan Loop site) and 1150 Ocean Avenue (former Kragen Auto Parts site).

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[64] The City College of San Francisco Ocean campus is included in the boundaries of the plan area, although the college is not under the City and County of San Francisco's jurisdiction. The City College master plan and EIR were approved in June 2004. The updated City College facilities master plan was approved by the Board of Trustees in March 2019. *https://www.ccsf.edu/en/about-city-college/administration/vcfa/facilities_planning/facilities-master-plan.html*

Program-Level Impacts

Traffic

As noted in the Regulatory Framework, CEQA no longer considers automobile delay (traffic) impacts. The following PEIR traffic impact summary is provided for informational purposes.

Intersection operating conditions in the plan area were analyzed for 13 study intersections for the weekday p.m. peak hour for two future scenarios: 2025 without the area plan and 2025 with the area plan. The transportation analysis identified significant traffic impacts at five of the 13 study intersections: Ocean Avenue/Junipero Serra Boulevard; Ocean Avenue/Geneva Avenue/Frida Kahlo Way; Ocean Avenue/I-280 Northbound (NB) On-Ramp; Ocean Avenue/San Jose Avenue; Geneva Avenue/I-280 Southbound (SB) and NB Ramps. The PEIR identified mitigation measures to reduce impacts to less-than-significant levels at three of the five impacted intersections: Ocean Avenue/Junipero Serra Boulevard; Ocean Avenue/I-280 NB On-Ramp; and Ocean Avenue/San Jose Avenue. No feasible mitigation measures were identified to address operating conditions at two of the five impacted intersections: Ocean Avenue/Geneva Avenue/Frida Kahlo Way; and Geneva Avenue/I-280 NB and SB Ramps. Therefore, the PEIR concluded that implementation of the area plan would result in significant unavoidable cumulative traffic impacts at these intersections. Significant cumulative traffic impacts were specifically identified at the intersections of Ocean Avenue/Junipero Serra Boulevard and Ocean Avenue/San Jose Avenue intersections.

With the Lee Avenue Connection to City College variant, proposed by City College, a portion of City College vehicle traffic would shift from Frida Kahlo Way to Lee Avenue. The transportation analysis of this variant identified a significant traffic impact at the Ocean Avenue/Lee Avenue intersection. Installation of a dedicated eastbound left turn lane at the Ocean Avenue/Lee Avenue intersection was identified as a possible mitigation. However, this would require relocation of the light-rail tracks and result in disruptions to San Francisco Municipal Railway (Muni) service during construction. City College had not committed to paying a fair share and the mitigation was determined to be infeasible. Limiting vehicular movements (specifically allowing westbound right-turns and prohibiting eastbound left-turns) at Ocean Avenue/Lee Avenue and extending Lee Avenue to the parking facilities was identified as a possible alternative. However, more detailed analysis would be required to evaluate potential conflicts between right-turning vehicles and pedestrians and impacts on Muni operations. Therefore, it was determined that provision of full access to City College parking facilities from Ocean Avenue would create significant traffic impacts. Any future plan from City College to allow access to City College parking facilities from Ocean Avenue would require separate environmental review.

The area plan proposed a single-point interchange that would consolidate the on- and off-ramps at Geneva and Ocean avenues. The proposed reconfiguration would create a significant traffic impact due to queueing onto the I-280 mainline. Therefore, at the program level of analysis conducted for the PEIR, the impacts on the Geneva Avenue/I-280 SB and NB Ramps were identified as significant and unavoidable under California Environmental Quality Act (CEQA).

Transit

Significant transit impacts were also identified under the 2025 with Area Plan scenario on the K Ingleside line and at Ocean Avenue/Geneva Avenue/Frida Kahlo Way and the new Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp intersections.

- As noted in the Impact TR-4, CEQA no longer considers transit capacity utilization impacts. The following PEIR capacity utilization impact summary is provided for informational purposes.

  PEIR concluded that implementation of the area plan would contribute about 6 percent to the future ridership on the K Ingleside line at the maximum load point,[65] increasing the already exceeded capacity utilization from 100 percent to 106 percent during the p.m. peak period. As such, the area plan was considered to have a significant contribution to adverse transit conditions on the K Ingleside line. No feasible mitigation measures were identified that would reduce this impact to a less-than-significant level. Therefore, this was identified as a significant, unavoidable impact.
- Transit impacts identified at the Ocean Avenue/Geneva Avenue/Frida Kahlo Way intersection are a result of proposed changes to the intersection configuration, including elimination of the channelized westbound and southbound right-turn pockets and restriping of the eastbound and northbound approaches. The intersection reconfiguration was reported to significantly impact intersection operations and result in congestion that could affect operations of the K Ingleside on Ocean Avenue and Muni buses on southbound Frida Kahlo Way. The PEIR did not identify a time-based threshold of significance (e.g., minutes of transit delay) to make this significance finding. No feasible mitigation measures were identified that would reduce this impact to a less-than-significant level. Therefore, this was identified as a significant and unavoidable impact.
- Transit impacts identified at the new Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp intersection would similarly largely be attributable to the proposed reconfiguration of the intersections and freeway ramps and not to increased vehicle traffic generated by area plan development.[66] Operations would worsen to level of service (LOS) F due to the consolidation of all movements into a single intersection. The PEIR did not identify a time-based threshold of significance (e.g., minutes of transit delay) to make this significance finding. No feasible mitigation measures were identified that would reduce this impact to a less-than-significant level. Therefore, this was identified as a significant and unavoidable impact.

Parking

The PEIR did not identify significant impacts related to parking. The PEIR identified Improvement Measure (Parking) to further reduce less-than-significant impacts related to the anticipated parking shortfall by reducing parking demand. Two scenarios were considered for the analysis of parking conditions with implementation of the area plan: (1) no parking provided (as allowed under the proposed planning code changes with the area plan); and (2) current code-required parking provided. If no parking were to be provided as part of development proposals within the plan area, there would be a shortfall of about 3,004 parking spaces during the weekday evening period. If the maximum parking were to be provided under the current planning code requirement, there would

65 The maximum load point is the point (i.e., a bus stop or boarding location) at which the highest number of passengers are aboard a transit vehicle on a designated bus line and route direction at a specified time or time period.

66 San Francisco Planning Department, December 4, 2008, *Balboa Park Station Area Plan Environmental Impact Report, Volume 1*, p. 183-184, *http://default.sfplanning.org/MEA/2004.1059E_Balboa_FEIR_Pt1.pdf*, website accessed June 5, 2019.

be a shortfall of about 929 parking spaces during the weekday evening period. With the new developments proposed in the area plan, and with either current or proposed parking requirements, parking occupancy in the plan area would increase to over 100 percent capacity at full buildout. Due to parking supply constraints and the accessibility to transit and other alternate modes, future parking demand and shortfalls may be lower than estimated.

Pedestrian and Bicycle

The PEIR found the impacts related to pedestrians and bicycle circulation to be less than significant. The PEIR identified Improvement Measure (Walking/Accessibility) to further reduce less-than-significant impacts related to the anticipated increase in the number of people walking. The improvement measure was intended to be undertaken by San Francisco Municipal Transportation Agency (SFMTA) in coordination with sponsors of subsequent development projects to provide pedestrian signals with countdown indicators at all major intersections and at crosswalks that connect to the Muni light-rail stops and Balboa Park BART station. The PEIR identified Improvement Measure (Bicycles) to further reduce less-than-significant impacts related to provision of bicycle parking and amenities.

The proposed bicycle lanes along Ocean Avenue under the area plan would require the elimination of one through-lane in the westbound direction between the I-280 Southbound Off-Ramp and Geneva Avenue. As a result, delay at the westbound approach to the Ocean Avenue/Geneva Avenue/Frida Kahlo Way intersection would increase and the proposed bicycle lanes would result in significant impacts on traffic operations at this intersection. No feasible mitigation measures were identified and this was considered a significant and unavoidable impact in the PEIR.

Loading and Construction

The PEIR found the impacts related to loading could not be assessed for future developments in the plan area and that analysis of construction impacts is specific to individual development or transportation projects. The PEIR did not assess specific loading and construction impacts of future development but concluded that construction impacts associated with individual development projects would not be considered significant since they are temporary and short-term in duration. The PEIR identified Improvement Measure (Construction) to further reduce less-than-significant construction-related transportation impacts of individual projects within the plan area intended to be undertaken by sponsors of subsequent development projects.

3.B.4 Existing Conditions

The project site is a 17.6-acre rectangular parcel and encompasses Assessor’s Block 3180/Lot 190 in San Francisco’s West of Twin Peaks neighborhood. The project location and site characteristics are described in SEIR Section 2.A, Project Overview, p. 2-1, and Section 2.D.2, Project Site, p. 2-7. The existing land use setting is described in Appendix B, Initial Study, Section E.1, Land Use and Land Use Planning, p. B-12.

The transportation study area includes all aspects of the transportation network within generally two blocks of the project site, generally bounded by Frida Kahlo Way to the east, Miramar Avenue to the west, Holloway Avenue to the south, and Monterey Boulevard to the north. The transportation study area consists of travel corridors and facilities such as transit routes and stations, bicycle routes and amenities, pedestrian sidewalks and crossings, and the overall vehicular roadway network that residents, employees, and visitors would use in traveling to and from the project site. The transportation study area and study intersections are shown in **Figure 3.B-1, Transportation Study Area and Study Intersections**. The 23 study intersections were selected either because they:

- Represent access points to the regional highway system (e.g., freeway on- and off-ramps);
- Are located along major street corridors serving the project site (e.g., Ocean Avenue and Frida Kahlo Way); or
- Are located in the immediate vicinity of the project site (e.g., San Ramon Way/Southwood Drive/Plymouth Avenue).

As a result, they are the intersections most likely to be potentially impacted by vehicle traffic generated by the proposed project. The six study intersections providing access to the regional highway system are located outside of the transportation study area, but are included because they represent access points to the regional highway system (e.g., freeway on- and off-ramps) and are located along major street corridors serving the project site. The following section describes the existing transportation and circulation conditions.

Regional and Local Roadways

The following describes the closest regional roadways to the project site, including freeway on- and off-ramps. In addition, the following describes the existing local roadways in the study area, including their geographic extent; San Francisco General Plan, Better Streets Plan, Key Walking Street, and High Injury Corridor designation, if applicable; speed limit; and number and type of travel lanes and directions. For those existing streets adjacent to the project site, the following also describes the width of the roadway, including travel lanes, and any potentially or observed vehicle to vehicle hazardous conditions. Lastly, the following describes the amount of people driving at study intersections.

Regional Roadways

Regional access to and from the project site is provided by I-280. I-280 extends from the southern portion of downtown San Francisco to U.S. 101 in San Jose. I-280 carries approximately 173,000 vehicles per day south of Geneva Avenue and 181,000 vehicles per day north of Ocean Avenue.[67] I-280 merges with U.S. 101 to the east of the project site and merges with Highway 1 to the southwest of the project site. U.S. 101 connects to the East Bay via I-80 and the San Francisco-Oakland Bay Bridge and, connecting to the South Bay and North Bay via surface streets and the Golden Gate Bridge. Access to I-280 from the project site is provided by on- and off-ramps at Ocean and Geneva avenues.

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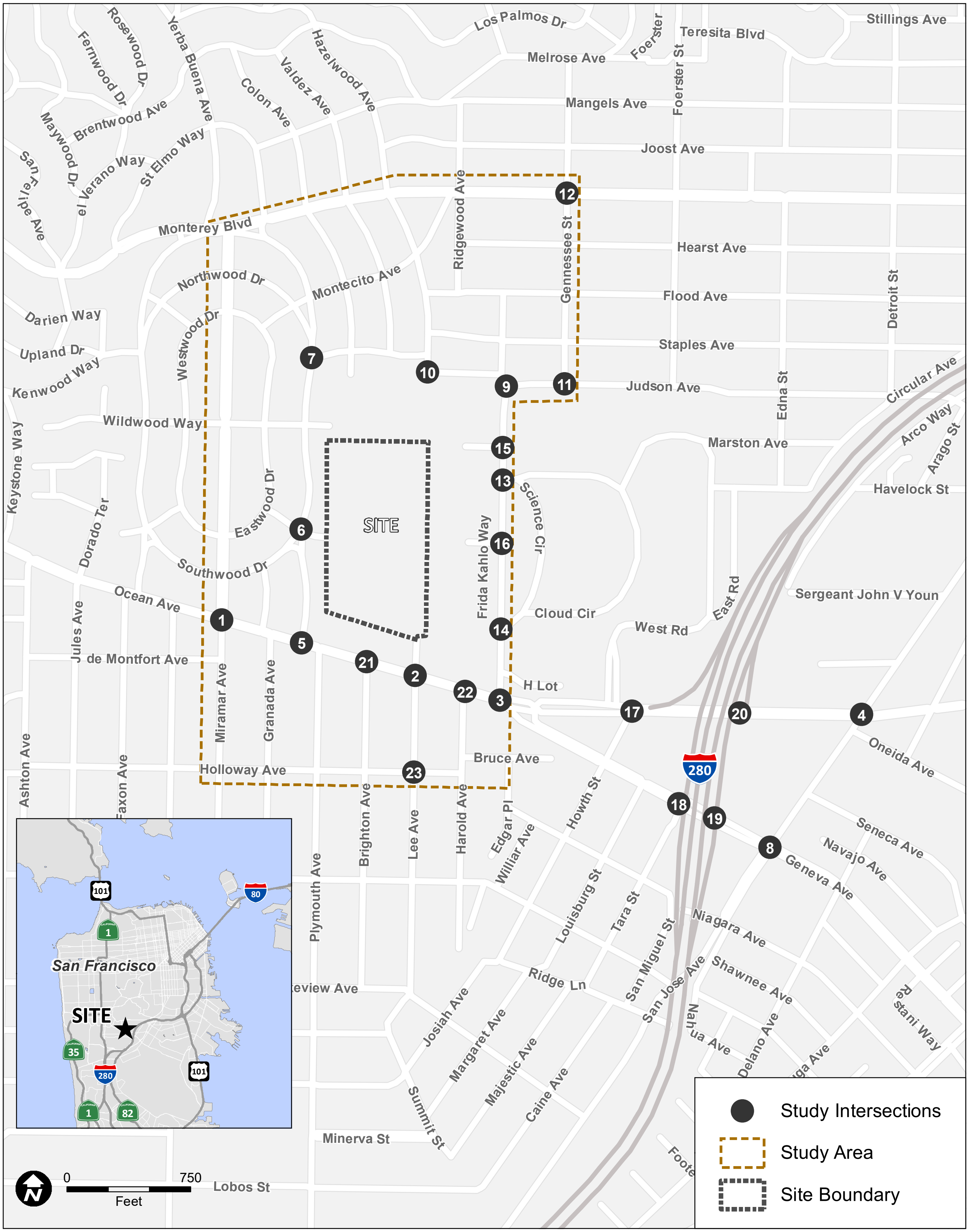
[67] California Department of Transportation (Caltrans), Year 2017 Traffic Volumes on the State Highway System, *http://www.dot.ca.gov/trafficops/census/volumes2017/*, accessed January 10, 2019.



Source: Kittelson & Associates, Inc., 2019

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Figure 3.B-1
Transportation Study Area and Study Intersections

Local Roadways

The study area is served by multiple local streets that provide access to the project site. **Table 3.B-1, Roadway Facilities in the Study Area**, lists local roadways in the study area by street name, direction (east–west or north–south), number of travel lanes, the streets' designation in the San Francisco General Plan (general plan) and on the City's Vision Zero Network, the streets' classification in the San Francisco Better Streets Plan (better streets plan), transit routes that use the street (if any), and bicycle facilities provided on the street (if any).

TABLE 3.B-1
ROADWAY FACILITIES IN THE STUDY AREA

Street Name	Direction	Number of Lanes (typical)[a]	General Plan & Vision Zero High Injury Network (HIN) Designations	Better Streets Plan Classification	Transit Routes[b]	Bicycle Facilities (typical)[c]
Ocean Avenue	E-W	2/3[d]	CMP and MTS Major Arterial, Vision Zero HIN	Commercial and Residential Throughway	29, 49, K, 91 Owl	Class II/class III
Geneva Avenue	E-W	2	CMP and MTS Major Arterial, Vision Zero HIN	Residential Throughway	8, 8BX, 29, 91 Owl	Class III
Monterey Boulevard	E-W	2	Vision Zero HIN	Residential Throughway	23, 36	Class III
Miramar Avenue	N-S	1	—	Neighborhood Residential	—	—
Brighton Avenue	N-S	1	—	Neighborhood Residential	—	—
Lee Avenue	N-S	1	—	Neighborhood Residential	—	Class II/class III[e]
Frida Kahlo Way	N-S	2	—	Neighborhood Residential	43	Class II
San Jose Avenue	N-S	2[d]	CMP and MTS Major Arterial, Vision Zero HIN	Neighborhood Residential	J/M	—

SOURCES: Kittelson & Associates, Inc. 2019; San Francisco General Plan; San Francisco Vision Zero High Injury Network; San Francisco Better Streets Plan.

NOTES:

E-W = east–west; N-S = north–south; CMP = congestion management plan; MTS = Metropolitan Transportation System; HIN = High Injury Network

The descriptions associated with each street (General Plan Designation, Vision Zero High Injury Network, Better Streets Plan Classification, Transit Routes, etc.) are those that apply to some portion of the street near the project site and may not apply to the entire length of the street.

a Number of lanes per direction.
b Transit routes listed include lines that operate on streets within the study area but do not have stops within the study area (i.e., 36, J).
c Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists. Class II bikeways are on-street bike lanes striped within the paved areas of roadways. Class III bikeways are signed bike routes. Class IV bikeways are on-street bike lanes that are protected from adjacent vehicular travel lanes by vertical separation such as curbs or soft-hit posts.
d Two travel lanes in both directions with a center-running Muni light-rail line.
e Class II bikeway in the uphill (southbound) direction and class III bikeway in the downhill (northbound) direction.

Vehicular Counts

As part of the transportation technical analysis, vehicular turning movement counts were collected at 23 intersections on Wednesday January 31, 2018, and Tuesday August 28, 2018, when City College was in session during the weekday a.m. (7 to 9 a.m.) and weekday p.m. (4 to 6 p.m.) peak periods. The 23 study intersections were selected either because they represent access points to the regional highway system (e.g., freeway on- and off-ramps), are located along major street corridors serving the project site (e.g., Ocean Avenue and Frida Kahlo Way), or are located in the immediate vicinity of the project site (e.g., San Ramon Way/Southwood Drive/Plymouth Avenue), and because they are the intersections most likely to be potentially impacted by vehicle traffic generated by the proposed project. Vehicular counts are summarized in **Table 3.B-2, Vehicular Counts at Study Intersections**.

Walking Conditions

A qualitative evaluation of existing pedestrian conditions was conducted during field visits to the transportation study area in August and September 2018. Counts of people walking[68] were collected on Wednesday January 31, 2018, and Tuesday August 28, 2018, when City College was in session during the weekday a.m. (7 to 9 a.m.) and weekday p.m. (4 to 6 p.m.) peak periods.

Observations of facilities for people walking included sidewalks, crosswalks, and curb ramps and pedestrian activity within the study area. Observations indicated facilities for people walking were generally complete in the study area, with sidewalks provided continuously on both sides of the streets and crosswalks provided at most intersections. However, access for people walking to and from the project site is limited, particularly in the north, south, and west sides, which lack a direct connection to the project site.

Sidewalks on the east and west side of Lee Avenue between the project site and Ocean Avenue are 8 feet wide and 6 feet wide, respectively, including a 3- to 4-foot-wide planting strip. Sidewalks on the north side of Ocean Avenue between Lee Avenue and Harold Way are approximately 10 feet wide including a 3- to 4-foot-wide planting strip.[69] There are high visibility marked crossings and pedestrian countdown signals provided at all signalized intersections adjacent to the project block.[70]

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68 People walking includes people with disabilities that may or may not require assistive mobility devices.

69 The effective clear widths of the sidewalks vary depending on the presence of landscaping, utility poles, parking meters, and other street furniture (e.g., newspaper racks, bike racks, benches). For example, the landscaping along the Ocean Avenue north sidewalk reduces the effective sidewalk width from ten feet to about six feet in most locations.

70 Crosswalk markings are classified as basic or high visibility. Basic crosswalk markings consist of two transverse lines. High visibility markings consist of diagonal or longitudinal lines parallel to traffic flow with or without transverse lines. High visibility markings are detected at about twice the distance upstream as basic transverse markings during daytime conditions. National Committee on Uniform Traffic Control Devices, Crosswalk Markings, January 2011, *https://ceprofs.civil.tamu.edu/ghawkins/MTC-Files/2011-06_Meeting/Marking_No.1.pdf*, accessed February 6, 2019.

TABLE 3.B-2
VEHICULAR COUNTS AT STUDY INTERSECTIONS

Number	Intersection	Number of Vehicles[a,b]	
		A.M. Peak Hour	P.M. Peak Hour
1	Ocean Avenue/Miramar Avenue	1,833	1,876
2	Ocean Avenue/Lee Avenue	1,898	2,021
3	Ocean Avenue/Frida Kahlo Way/Geneva Avenue	2,090	2,293
4	Ocean Avenue/San Jose Avenue	1,376	1,413
5	Ocean Avenue/Plymouth Avenue	1,841	1,866
6	San Ramon Way/Southwood Drive/Plymouth Avenue	422	409
7	Greenwood Avenue/Plymouth Avenue	430	397
8	Geneva Avenue/San Jose Avenue	2,590	2,485
9	Judson Avenue/Frida Kahlo Way	1,030	1,040
10	Judson Avenue/Hazelwood Avenue	437	341
11	Judson Avenue/Gennessee Street	851	780
12	Monterey Boulevard/Gennessee Street	1,684	1,636
13	Cloud Circle (N)/Frida Kahlo Way	750	923
14	Cloud Circle (S)/Frida Kahlo Way	1,074	1,210
15	City College Upper Reservoir Lot (N)/Frida Kahlo Way	750	923
16	City College Upper Reservoir Lot (S)/Frida Kahlo Way	1,074	1,210
17	I-280 SB Off Ramp/Ocean Avenue	1,505	1,509
18	I-280 SB Ramps/Geneva Avenue	2,463	2,590
19	I-280 NB Ramps/Geneva Avenue	2,653	2,642
20	I-280 NB Ramps/Ocean Avenue	1,101	1,207
21	Ocean Avenue/Brighton Avenue	1,708	1,846
22	Ocean Avenue/Harold Avenue	1,905	1,981
23	Holloway Avenue/Lee Avenue	440	378

SOURCE: Quality Counts, 2018.

NOTES:

a Vehicle volume (number of vehicles) reflects the sum of all turning movements at the intersection.
b The weekday a.m. peak hour is the peak one hour (four consecutive 15-minute intervals) of vehicle traffic occurring between 7 and 9 a.m. The weekday p.m. peak hour is the peak one hour (four consecutive 15-minute intervals) of vehicle traffic occurring between 4 and 6 p.m.

Based on observations, general impediments to people walking within the study area include the following:

- Heavy vehicle traffic volumes associated with nearby freeway ramps and right-turn movements at the following locations:
  - Ocean Avenue/Frida Kahlo Way/Geneva Avenue, westbound right turn
  - Ocean Avenue/Frida Kahlo Way/Geneva Avenue, eastbound right turn
  - Ocean Avenue/I-280 SB Off-Ramp free, southbound right turn

- Nonstandard intersection geometry and curvilinear approach at Frida Kahlo Way/Judson Avenue. Drivers heading northbound must use a short left-turn pocket and wait for a gap in traffic before proceeding north on Frida Kahlo Way. Drivers focusing on gaps in opposing traffic flow are not as likely to see people crossing in the marked crosswalk, increasing the risk of conflicts for people walking.
- Long crossing distances and lack of marked crosswalks across some intersection legs:
  - Ocean Avenue/Frida Kahlo Way/Geneva Avenue, east leg
  - Ocean Avenue/I-280 NB Ramps, west leg
  - Geneva Avenue/I-280 SB Ramps, east leg and west leg
- Curb ramps are not Americans with Disabilities Act (ADA)-compliant and lack detectable warnings (i.e., tactile domes) at the following locations:
  - Ocean Avenue/Lee Avenue, southeast and southwest corners
  - Ocean Avenue/Brighton Avenue, southeast and southwest corners
  - Ocean Avenue/Plymouth Avenue, southeast and southwest corners
  - Ocean Avenue/Granada Avenue, all crossings
  - Ocean Avenue/Miramar Avenue, all crossings
- Elevation changes (about 100 feet) and steep grades (up to 15 percent) along Geneva Avenue between the project site and the Balboa Park Bay Area Rapid Transit (BART)/Muni Station make conditions for people walking more physically demanding and challenging

Counts of people walking are generally highest along the Ocean Avenue commercial district, near the Balboa Park BART/Muni station, and adjacent to City College. In these locations, the number of people walking peaks during the morning and evening commute periods as people walk to and from nearby transit stops and are also high during the midday when City College is in session. People walking to/from the K Ingleside transit stop on Ocean Avenue at Lee Avenue were observed to cross the rightmost travel lane to access the boarding island or sidewalk instead of crossing at the crosswalk. People waited for gaps in vehicle and bicycle traffic before crossing the travel lane and vehicles and bicycles were generally traveling slowly with sufficient gaps in traffic for people to cross. No conflicts were observed.

Observations and counts show the highest number of people walking at the intersection of Ocean Avenue/Lee Avenue with a total of 698 crossings at this location during the weekday a.m. peak hour and 866 people crossing during the weekday p.m. peak hour. At the Geneva Avenue/San Jose Avenue intersection, near Balboa Park BART/Muni station, a total of 750 crossings during the weekday a.m. peak hour and 549 crossings during the weekday p.m. peak hour. Other study intersections that experienced a relatively high number of crossings (i.e., within the top 20 percent of intersections based on the number of crossings) include Ocean Avenue/San Jose Avenue, Ocean Avenue/Plymouth Avenue, Ocean Avenue/I-280 SB Off-Ramp, and Ocean Avenue/Brighton Avenue. Walking counts are summarized in **Table 3.B-3, Walking Counts at Study Intersections – Weekday A.M. Peak Hour**, and **Table 3.B-4, Walking Counts at Study Intersections – Weekday P.M. Peak Hour**.

TABLE 3.B-3
WALKING COUNTS AT STUDY INTERSECTIONS – WEEKDAY A.M. PEAK HOUR

Number	Intersection	Intersection Leg (Number of Crossings)				
		North	South	East	West	Total
1	Ocean Avenue/Miramar Avenue	81	60	48	36	**225**
2	Ocean Avenue/Lee Avenue	250	147	171	130	**698**
3	Ocean Avenue/Frida Kahlo Way/Geneva Avenue	49	138	7	62	**256**
4	Ocean Avenue/San Jose Avenue	100	168	56	133	**457**
5	Ocean Avenue/Plymouth Avenue	74	97	24	14	**209**
6	San Ramon Way/Southwood Drive/Plymouth Avenue	0	4	23	25	**52**
7	Greenwood Avenue/Plymouth Avenue	2	1	6	3	**12**
8	Geneva Avenue/San Jose Avenue	330	101	106	213	**750**
9	Judson Avenue/Frida Kahlo Way	16	2	0	63	**81**
10	Judson Avenue/Hazelwood Avenue	4	4	10	10	**28**
11	Judson Avenue/Gennessee Street	19	26	37	32	**114**
12	Monterey Boulevard/Gennessee Street	12	39	19	29	**99**
13	Cloud Circle (N)/Frida Kahlo Way	45	21	37	36	**139**
14	Cloud Circle (S)/Frida Kahlo Way	4	201	34	28	**267**
15	City College Upper Reservoir Lot (N)/Frida Kahlo Way	29	39	37	72	**177**
16	City College Upper Reservoir Lot (S)/Frida Kahlo Way	74	43	37	39	**193**
17	I-280 SB Off Ramp/Ocean Avenue	78	313	73	0	**464**
18	I-280 SB Ramps/Geneva Avenue	193	126	0	20	**339**
19	I-280 NB Ramps/Geneva Avenue	12	155	147	5	**319**
20	I-280 NB Ramps/Ocean Avenue	158	149	53	0	**360**
21	Ocean Avenue/Brighton Avenue	161	160	35	24	**380**
22	Ocean Avenue/Harold Avenue	148	149	5	2	**304**
23	Holloway Avenue/Lee Avenue	30	17	37	21	**105**

SOURCE: Quality Counts, 2018.

TABLE 3.B-4
WALKING COUNTS AT STUDY INTERSECTIONS – WEEKDAY P.M. PEAK HOUR

Number	Intersection	Intersection Leg (Number of Crossings)				
		North	South	East	West	Total
1	Ocean Avenue/Miramar Avenue	191	131	56	61	**439**
2	Ocean Avenue/Lee Avenue	323	245	175	123	**866**
3	Ocean Avenue/Frida Kahlo Way/Geneva Avenue	88	94	0	88	**270**
4	Ocean Avenue/San Jose Avenue	89	81	58	100	**328**
5	Ocean Avenue/Plymouth Avenue	349	152	78	25	**604**
6	San Ramon Way/Southwood Drive/Plymouth Avenue	10	6	33	36	**85**
7	Greenwood Avenue/Plymouth Avenue	3	2	4	9	**18**
8	Geneva Avenue/San Jose Avenue	268	64	42	175	**549**
9	Judson Avenue/Frida Kahlo Way	18	0	0	55	**73**
10	Judson Avenue/Hazelwood Avenue	3	5	1	8	**17**
11	Judson Avenue/Gennessee Street	19	7	28	15	**69**
12	Monterey Boulevard/Gennessee Street	26	45	26	22	**119**
13	Cloud Circle (N)/Frida Kahlo Way	39	19	28	61	**147**
14	Cloud Circle (S)/Frida Kahlo Way	2	312	52	80	**446**
15	City College Upper Reservoir Lot (N)/Frida Kahlo Way	18	52	21	48	**139**
16	City College Upper Reservoir Lot (S)/Frida Kahlo Way	59	53	61	60	**233**
17	I-280 SB Off Ramp/Ocean Avenue	58	287	14	0	**359**
18	I-280 SB Ramps/Geneva Avenue	115	18	0	20	**153**
19	I-280 NB Ramps/Geneva Avenue	5	135	104	36	**280**
20	I-280 NB Ramps/Ocean Avenue	87	47	73	1	**208**
21	Ocean Avenue/Brighton Avenue	442	278	107	63	**890**
22	Ocean Avenue/Harold Avenue	183	150	0	3	**336**
23	Holloway Avenue/Lee Avenue	23	17	23	27	**90**

SOURCE: Quality Counts, 2018.

In 2014, San Francisco adopted the Vision Zero policy. The goal of the Vision Zero policy is to create a culture that prioritizes traffic safety and ensures that mistakes by motorists on roadways do not result in serious injuries or death. In 2015, the City released a pedestrian, cyclist, and vehicle high injury corridor report (the Vision Zero "High Injury Network") along with a two-year action strategy and new protocols for tracking traffic fatalities and improving the City's understanding of Vision Zero's impact. The project site is not located directly on the High Injury Network. However, the following street segments near the project site are identified as part of the 2017 High Injury Network:[71]

- Ocean Avenue between Frida Kahlo Way and Santa Ynez Avenue
- Geneva Avenue between Frida Kahlo Way and Paris Street

71 San Francisco Department of Public Health, Vision Zero High Injury Network: 2017, *http://sfgov.maps.arcgis.com/apps/webappviewer/index.html?id=fa37f1274b4446f1bdddd7bdf9e708ff*, accessed January 10, 2019.

- Monterey Boulevard between St. Elmo Way/Plymouth Avenue and Edna Street
- San Jose Avenue between Santa Ynez Avenue to Seneca Avenue and between Geneva Avenue and Wilson Street

Pedestrian collision data from the Statewide Integrated Traffic Reporting System (SWITRS) (2013–2017)[72] reported five pedestrian-involved collisions, including one severe injury, and no pedestrian fatalities within the study area.[73]

Bicycle Facilities and Circulation

A qualitative evaluation of existing bicycle conditions was conducted during field visits to the transportation study area in August and September 2018. Bicycle counts were collected on Wednesday January 31, 2018, and Tuesday August 28, 2018, when City College was in session during the weekday a.m. (7 to 9 a.m.) and weekday p.m. (4 to 6 p.m.) peak periods.

Bicycle facilities are typically classified into four classes, primarily based on the level of separation from vehicular traffic:[74]

- **Class I bikeway (bike path)**—This is a dedicated path for bicyclists and/or pedestrians that does not permit motorized travel. No class I bikeways exist in the study area.
- **Class II bikeway (bike lane)**—This is a portion of the roadway network that has been striped and signed for bicycle use. Implementation of class II bicycle facilities requires sufficient right-of-way between the vehicle stream and the curb or curbside parking. Bicycle lanes are typically used along collector or arterial streets with medium to high traffic volumes, providing additional travel space for bicyclists along busy roadway segments.
- **Class III bikeway (bike route)**—This is a bikeway that primarily serves to connect other facilities and destinations in the bikeway network. These routes include signage but do not have roadway markings or striping to indicate reserved space for the bicyclists. Bicyclists traveling on class III facilities must share travel lanes with vehicle traffic.
- **Class IV bikeway (separated bikeway)**—This is a dedicated, separated and protected on-street lane for bicyclists. Separated bike lanes (or protected bike lanes) are typically used along streets with high traffic volumes and high speeds, providing additional protection for bicyclists through the use of vertical separation, such as concrete curb or safe-hit posts. No class IV bikeways exist in the study area.

Existing on-street bicycle facilities, as designated by the SFMTA Bike Network Map, are shown in **Figure 3.B-2, Existing Bicycling Network**, and described below:[75]

- **Ocean Avenue**—A class III facility runs east–west between 19th Avenue and Frida Kahlo Way. A class II facility runs east–west between Frida Kahlo Way and Alemany Boulevard.

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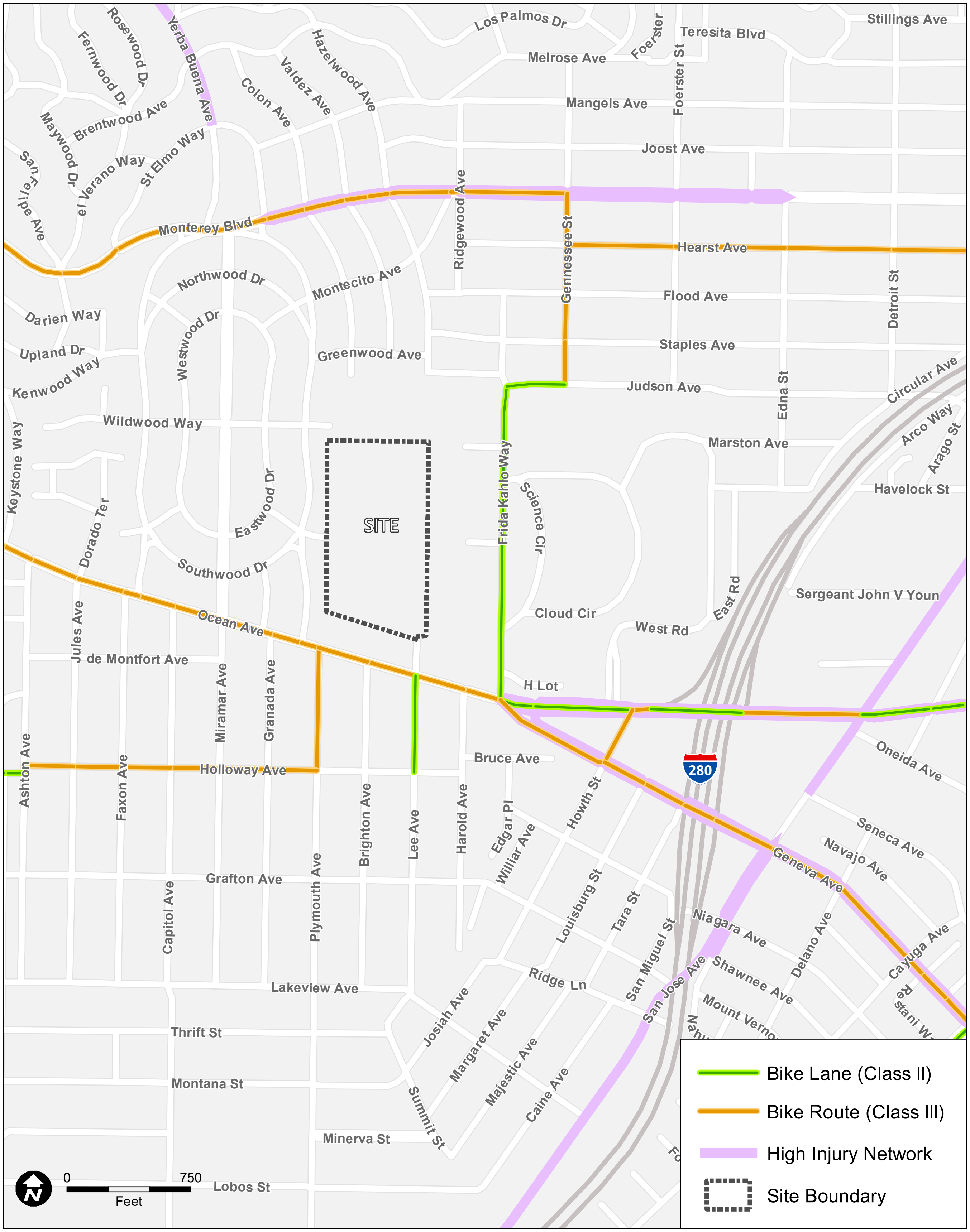
72 As of December 2018, when the analysis was conducted, this was the most recent complete set of final SWITRS data available from the California Highway Patrol.

73 UC Berkeley, Transportation Injury Mapping System, *https://tims.berkeley.edu/tools/gismap/*, accessed January 10, 2019.

74 Caltrans, *Highway Design Manual*, Chapter 1000, Bicycle Transportation Design, December 2015, *http://www.dot.ca.gov/design/manuals/hdm/chp1000.pdf*, accessed February 7, 2018.

75 SFMTA, San Francisco Bike Network Map, July 2016, *https://www.sfmta.com/maps/san-francisco-bike-network-map*, accessed May 25, 2018.



Source: Kittelson & Associates, Inc., 2019

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Figure 3.B-2
Existing Bicycling Network

- **Geneva Avenue**—A class III facility runs east–west from Frida Kahlo Way to Paris Street where it becomes a class II facility and continues as a class II and class III facility to the Cow Palace.
- **Monterey Boulevard**—A class III facility runs east–west from Santa Clara Avenue to Gennessee Street.
- **Plymouth Avenue**—A class III facility runs north–south and extends one block from Holloway Avenue to Ocean Avenue.
- **Lee Avenue**—A class II facility runs in the uphill (southbound) direction and extends one block from Ocean Avenue to Holloway Avenue. A class III facility runs in the downhill (northbound) direction and extends one block from Holloway Avenue to Ocean Avenue.
- **Frida Kahlo Way**—A class II facility runs north–south from Ocean Avenue to Judson Avenue and continues on Judson Avenue to Gennessee Street.

As shown on Figure 3.B-2, there are dedicated bicycle facilities on the following segments that overlap with the Vision Zero High Injury Network discussed in "Walking Conditions," p. 3.B-9.

- Ocean Avenue, east of Frida Kahlo Way;
- Geneva Avenue, south of Frida Kahlo Way; and
- Monterey Boulevard, between St Elmo Way/Plymouth Avenue and Gennessee Street.

Bicycle collision data from the Statewide Integrated Traffic Reporting System (2013–2017) reported four bicycle-involved collisions, including one severe injury, and no bicyclist fatalities within the study area.[76]

Frida Kahlo Way and segments of Ocean Avenue within the study area are relatively flat with elevation changes north and south of Ocean Avenue. The project site is located close to two major transit hubs (City College Terminal and Balboa Park BART/Muni Station) and bicycle friendly uses, including the City College Ocean Avenue campus and neighborhood-oriented retail. However, general impediments to people bicycling observed within the study area include the following:

- Elevation changes and steep and sustained grades (e.g., on Geneva Avenue);
- Heavy vehicle traffic volumes and high-speed uncontrolled movements at freeway ramp terminals;
- Nonstandard intersection geometry and high vehicle volumes at Ocean Avenue/Frida Kahlo Way/Geneva Avenue;
- Muni light-rail trackway along Ocean Avenue creates an uneven surface and bicycle tires can become stuck in rail flanges when in-street tracks are crossed at low angles; and
- Lack of protected or separated bicycle facilities.

Field observations and count data indicate that bicycle use is low, with up to 13 individuals bicycling along Ocean Avenue in the westbound direction and six individuals bicycling in the eastbound direction, and between five and eight people bicycling along Frida Kahlo Way in the northbound and southbound directions during both peak hours. Counts of people biking are generally highest along the Ocean Avenue commercial district and adjacent to City College, where

[76] UC Berkeley, Transportation Injury Mapping System, *https://tims.berkeley.edu/tools/gismap/*, accessed January 10, 2019.

there are designated bicycle facilities. Fewer people bicycling were observed on Geneva Avenue near the freeway ramps and in the Westwood Park neighborhood. Bicycling counts are summarized in **Table 3.B-5, Bicycling Counts at Study Intersections – Weekday A.M. Peak Hour**, and **Table 3.B-6, Bicycling Counts at Study Intersections – Weekday P.M. Peak Hour**.

TABLE 3.B-5
BICYCLING COUNTS AT STUDY INTERSECTIONS – WEEKDAY A.M. PEAK HOUR

		Intersection Approach (Number of People Biking)				
Number	**Intersection**	**North**	**South**	**East**	**West**	**Total**
1	Ocean Avenue/Miramar Avenue	0	2	4	1	**7**
2	Ocean Avenue/Lee Avenue	1	0	5	13	**19**
3	Ocean Avenue/Frida Kahlo Way/Geneva Avenue	0	0	2	10	**12**
4	Ocean Avenue/San Jose Avenue	5	1	3	3	**12**
5	Ocean Avenue/Plymouth Avenue	0	0	6	5	**11**
6	San Ramon Way/Southwood Drive/Plymouth Avenue	0	1	0	0	**1**
7	Greenwood Avenue/Plymouth Avenue	3	4	0	0	**7**
8	Geneva Avenue/San Jose Avenue	0	1	2	1	**4**
9	Judson Avenue/Frida Kahlo Way	4	3	6	0	**13**
10	Judson Avenue/Hazelwood Avenue	0	3	1	0	**4**
11	Judson Avenue/Gennessee Street	2	0	2	5	**9**
12	Monterey Boulevard/Gennessee Street	0	1	1	7	**9**
13	Cloud Circle (N)/Frida Kahlo Way	8	6	1	0	**15**
14	Cloud Circle (S)/Frida Kahlo Way	8	7	0	0	**15**
15	City College Upper Reservoir Lot (N)/Frida Kahlo Way	6	5	0	1	**12**
16	City College Upper Reservoir Lot (S)/Frida Kahlo Way	6	4	0	0	**10**
17	I-280 SB Off Ramp/Ocean Avenue	0	0	7	7	**14**
18	I-280 SB Ramps/Geneva Avenue	1	0	3	3	**7**
19	I-280 NB Ramps/Geneva Avenue	0	0	3	3	**6**
20	I-280 NB Ramps/Ocean Avenue	0	0	2	4	**6**
21	Ocean Avenue/Brighton Avenue	0	0	12	5	**17**
22	Ocean Avenue/Harold Avenue	0	0	13	5	**18**
23	Holloway Avenue/Lee Avenue	1	2	5	3	**11**

SOURCE: Quality Counts, 2018.

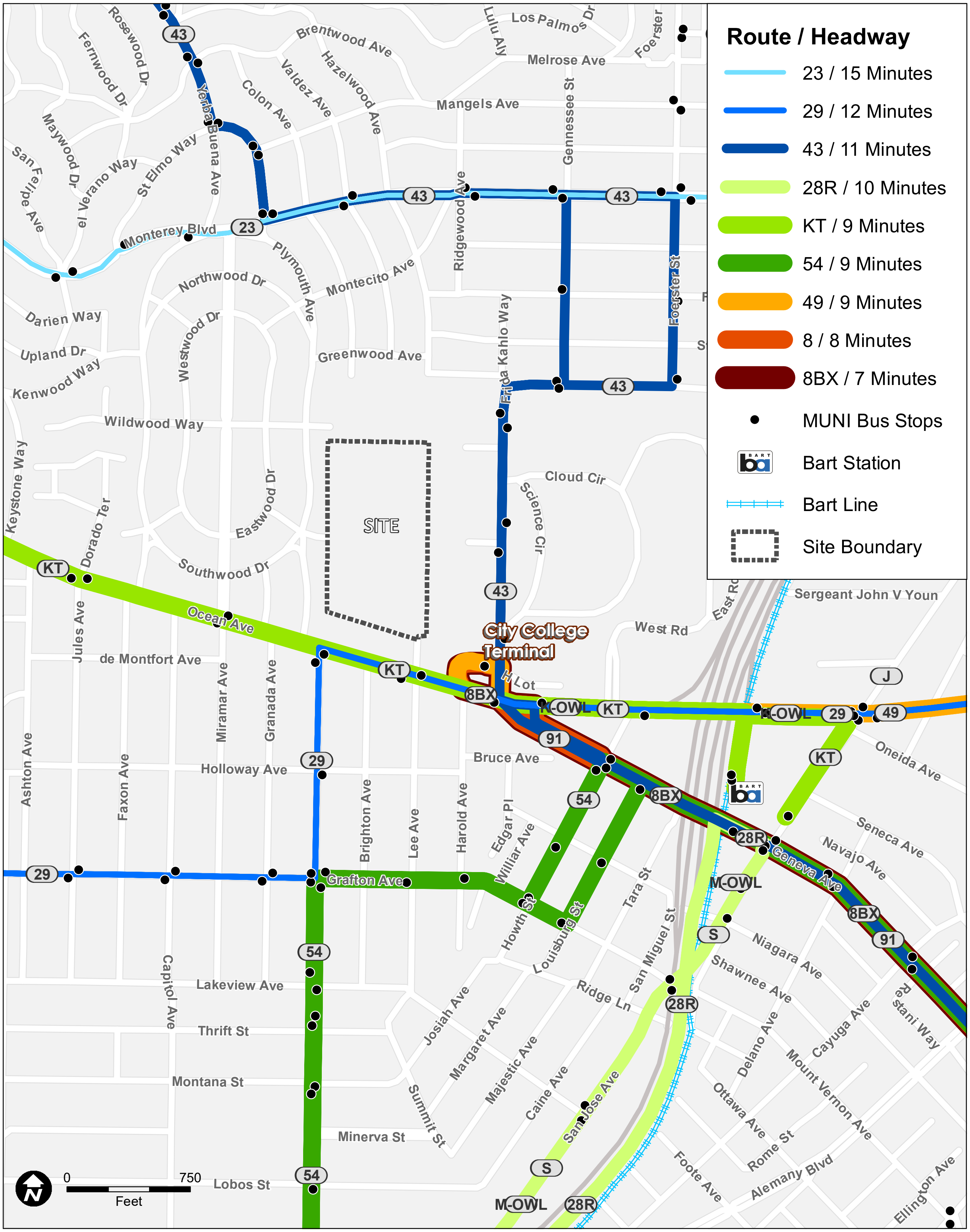
TABLE 3.B-6
BICYCLING COUNTS AT STUDY INTERSECTIONS – WEEKDAY P.M. PEAK HOUR

Number	Intersection	Intersection Approach (Number of People Biking)				
		North	South	East	West	Total
1	Ocean Avenue/Miramar Avenue	0	1	6	10	**17**
2	Ocean Avenue/Lee Avenue	0	0	3	7	**10**
3	Ocean Avenue/Frida Kahlo Way/Geneva Avenue	2	1	5	5	**13**
4	Ocean Avenue/San Jose Avenue	4	1	3	2	**10**
5	Ocean Avenue/Plymouth Avenue	0	0	6	11	**17**
6	San Ramon Way/Southwood Drive/Plymouth Avenue	0	1	0	2	**3**
7	Greenwood Avenue/Plymouth Avenue	0	0	0	0	**0**
8	Geneva Avenue/San Jose Avenue	4	1	2	1	**8**
9	Judson Avenue/Frida Kahlo Way	1	1	2	0	**4**
10	Judson Avenue/Hazelwood Avenue	0	0	1	0	**1**
11	Judson Avenue/Gennessee Street	4	0	0	7	**11**
12	Monterey Boulevard/Gennessee Street	1	2	5	2	**10**
13	Cloud Circle (N)/Frida Kahlo Way	6	7	3	0	**16**
14	Cloud Circle (S)/Frida Kahlo Way	2	7	2	0	**11**
15	City College Upper Reservoir Lot (N)/Frida Kahlo Way	2	7	0	0	**9**
16	City College Upper Reservoir Lot (S)/Frida Kahlo Way	2	7	0	0	**9**
17	I-280 SB Off Ramp/Ocean Avenue	0	0	4	4	**8**
18	I-280 SB Ramps/Geneva Avenue	0	0	5	1	**6**
19	I-280 NB Ramps/Geneva Avenue	0	0	1	5	**6**
20	I-280 NB Ramps/Ocean Avenue	0	0	1	0	**1**
21	Ocean Avenue/Brighton Avenue	0	0	5	8	**13**
22	Ocean Avenue/Harold Avenue	3	0	9	8	**20**
23	Holloway Avenue/Lee Avenue	0	1	9	2	**12**

SOURCE: Quality Counts, 2018.

Public Transit Conditions

The project site is served by local transit provided by Muni, operated by the SFMTA. Regional transit service is provided to the East Bay and South Bay/Peninsula via the BART station. **Figure 3.B-3, Existing Transit Service Weekday P.M. Peak Headways**, presents the local and regional transit routes in the transportation study area.



Source: Kittelson & Associates, Inc., 2019

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Figure 3.B-3
Existing Transit Service Weekday P.M. Peak Headways

Local Transit

Muni

Muni provides transit service within the City and County of San Francisco, including bus (diesel, bio-diesel/electric hybrid, and electric trolley), light-rail (Muni Metro), cable car, and electric streetcar lines. **Table 3.B-7, Local Muni Operations**, summarizes Muni service characteristics for the Muni routes operating within the study area with bus stops located within 0.5 mile of the project site.

TABLE 3.B-7
LOCAL MUNI OPERATIONS

Route	Headways[a]		Hours of Operation	Nearest Stop to the Project Site	Neighborhoods Served
	Weekday A.M. Peak Period (7–9 a.m.)	Weekday P.M. Peak Period (4–6 p.m.)			
8	8	8	5–12:10 a.m.	City College Terminal	Chinatown, Crocker Amazon, Excelsior, Financial District, Nob Hill, North Beach, Ocean View, Outer Mission, Russian Hill, South of Market, Visitacion Valley, West of Twin Peaks
8BX	7	7	6:30–9:30 a.m. (inbound) and 3:30–6:40 p.m. (outbound)	City College Terminal	
23	20	20	5:45 a.m.–11:30 p.m.	Monterey Boulevard/ Ridgewood Avenue	Bayview, Bernal Heights, Diamond Heights, Excelsior, Glen Park, Lakeshore, Outer Mission, Parkside, West of Twin Peaks
28R	10	10	7 a.m.–7 p.m.	Geneva Avenue/ San Jose Avenue	Crocker Amazon, Golden Gate Park, Inner Richmond, Inner Sunset, Lakeshore, Ocean View, Outer Mission, Outer Richmond, Outer Sunset, Presidio, Presidio Heights, West of Twin Peaks
29	10	12	5:55–12:10 a.m.	Ocean Avenue/Lee Avenue	Bayview, Excelsior, Golden Gate Park, Inner Richmond, Lakeshore, Ingleside, Outer Mission, Outer Richmond, Outer Sunset, Parkside, Presidio, Seacliff, Visitacion Valley, West of Twin Peaks, Inner Sunset
43	9	11	5:15–12:30 a.m.	Frida Kahlo Way/Judson Avenue & Frida Kahlo Way/City College Terminal	Crocker Amazon, Excelsior, Golden Gate Park, Inner Richmond, Marina, Ocean View, Outer Mission, Pacific Heights, Presidio, Presidio Heights, Twin Peaks, West of Twin Peaks, Western Addition, Inner Sunset
49	8	9	5:40–12:10 a.m.	City College Terminal	Bernal Heights, Downtown/Civic Center, Excelsior, Glen Park, Marina, Mission, Nob Hill, Noe Valley, Ocean View, Outer Mission, Pacific Heights, Russian Hill, South of Market, West of Twin Peaks, Western Addition
54	20	20	5:40–12:10 a.m.	City College Terminal	Bayview, Crocker Amazon, Excelsior, Lakeshore, Ocean View, Outer Mission, Visitacion Valley, West of Twin Peaks

Route	Headways[a] Weekday A.M. Peak Period (7–9 a.m.)	Headways[a] Weekday P.M. Peak Period (4–6 p.m.)	Hours of Operation	Nearest Stop to the Project Site	Neighborhoods Served
91	—	—	12–6 a.m.	Ocean Avenue/Lee Avenue	Bayview, Chinatown, Crocker Amazon, Downtown/Civic Center, Excelsior, Financial District, Golden Gate Park, Inner Richmond, Lakeshore, Marina, Nob Hill, North Beach, Ocean View, Outer Mission, Outer Sunset, Parkside, Potrero Hill, Presidio, Russian Hill, South of Market, Visitacion Valley, West of Twin Peaks, Inner Sunset
K	8	9	4:40–12:20 a.m.	Ocean Avenue/Lee Avenue	Bayview, Castro/Upper Market, Chinatown, Downtown/Civic Center, Financial District, Lakeshore, Mission, Noe Valley, Ocean View, Outer Mission, Parkside, Potrero Hill, South of Market, Twin Peaks, Visitacion Valley, West of Twin Peaks

SOURCE: Muni, 2019. *https://www.sfmta.com/getting-around/muni/routes-stops*.

NOTES: "—" indicates value not applicable.

Transit routes shown have a bus stop within 0.5 mile of the project site.

[a] Headway refers to scheduled time between buses, presented in minutes. Headways shown are an average headway for the corresponding weekday a.m. (7 to 9 a.m.) and weekday p.m. (4 to 6 p.m.) peak-hour headway schedule.

Muni provides local transit for destinations within San Francisco, with nearby service along Ocean Avenue, Geneva Avenue, and Frida Kahlo Way. Muni operates eight bus lines and one light-rail line with stops located within about 0.5 mile of the project site.

Major bus routes operating within 0.5 mile of the project site include 8 Bayshore and 8BX Bayshore 'B' Express connecting to the Excelsior District, Visitacion Valley, Portola, Downtown, Chinatown, North Beach, and Fisherman's Wharf and the 49 Van Ness/Mission connecting to the Mission District and Van Ness Avenue corridor. Additional crosstown routes serving the site include the 23 Monterey, 28R 19th Avenue Rapid, 29 Sunset, 43 Masonic, and 54 Felton. The K Ingleside line rail line provides service along Ocean Avenue (center-running on the street), connecting to Balboa Park BART/Muni Station at its eastern terminus and traveling west through the Twin Peaks Tunnel and Market Street Subway to downtown San Francisco.

Muni increased capacity on the K/T Third/Ingleside rail line by running two-car trains. Two-car trains operate for the length of Third Street and in the tunnel. However, for the Ocean Avenue section of the line, many boarding islands do not extend the length of a two-car train. Therefore, only the front car on trains along Ocean Avenue are in service. When a two-car outbound train reaches City College (Geneva Avenue), Junipero Serra Boulevard/Ocean Avenue, all passengers on the back car move to the first car and the operator locks the second car. It remains locked until returning to Junipero Serra/Ocean Avenue in the inbound direction when the second car is unlocked and proceeds through the tunnel and along Third Street. The transit boarding islands closest to the project site at Geneva Avenue, Lee Avenue, and Jules Avenue/Dorado Terrace are of sufficient length to safely board and unload one- and two-car trains; however, one-car service is provided so that riders do not get in a position of being unable to exit the vehicle at a one-car stop location. During observations conducted between 7 and 9 a.m. and 4 and 6 p.m. on Tuesday April 2, 2019, trains arrived generally within one or two minutes of the scheduled time and crowding was not observed.

A local transit hub is provided at the City College Terminal located at the northwest corner of Ocean Avenue/Frida Kahlo Way/Geneva Avenue. The terminal provides ingress from Ocean Avenue and egress onto Frida Kahlo Way north of the San Francisco Fire Department (fire department) Station 15. The City College Terminal provides three boarding bays (two island bays and one curb bay) shared between the 8, 8BX, and 49 routes. Muni egress onto Frida Kahlo Way is facilitated by actuated transit-only signals.[77]

Muni transit operations in the study area were evaluated using transit delay analysis. The transit delay analysis presents the delay associated with traffic congestion, transit reentry,[78] and passenger boarding along the following corridors and Muni lines:

- Frida Kahlo Way from Judson Avenue to Ocean Avenue (Line 43)
- Ocean Avenue from Plymouth Avenue to San Jose Avenue (Lines K, 29, 49)
- Geneva Avenue from City College Terminal to San Jose Avenue (Lines 8, 8BX, 43, 54)

The results of the transit delay analysis are summarized in **Table 3.B-8, Existing Transit Delay**, and provided in Attachment C, Corridor Delay Analysis Synchro Worksheets, and Attachment D, Transit Reentry and Passenger Boarding Delay Analysis Calculations, of SEIR Appendix C2, Transit Assessment Memorandum. Transit ridership and capacity analysis are provided in Attachment F (transit ridership and capacity analysis) of SEIR Appendix C2 for informational purposes. Table 3.B-8 presents the estimated seconds of delay a transit vehicle encounters during the a.m. and p.m. peak hours along each of the study corridors.

TABLE 3.B-8
EXISTING TRANSIT DELAY

Corridor	Weekday a.m. Peak Hour (seconds of delay)		Weekday p.m. Peak Hour (seconds of delay)	
	Northbound/ Eastbound	Southbound/ Westbound	Northbound/ Eastbound	Southbound/ Westbound
Frida Kahlo Way	3	12	3	25
Ocean Avenue	110	132	113	133
Geneva Avenue	70	48	66	41

SOURCE: Kittelson & Associates Inc., 2018.
NOTES:
Transit delay includes corridor delay, transit reentry delay, and passenger boarding delay.

As shown in Table 3.B-8, the highest transit delays are experienced along Ocean Avenue between Plymouth Avenue and Judson Avenue. This is primarily caused by the vehicular traffic at the

77 Actuated signals respond to the traffic present at the intersection so that the pattern of the signal (the length and order of each phase) depends on the real-time traffic volumes and can be different at every cycle.
78 Transit reentry delay occurs when stopped transit vehicles wait for a gap in the traffic stream or wait for a queue to clear before they are able to reenter the travel lane.

Ocean Avenue/San Jose Avenue intersection, which operates with an average intersection delay above 100 seconds. Additionally, as a result of the high vehicle traffic volumes in the curbside travel lane on Ocean Avenue (between 900 and 930 vehicles per hour) transit vehicles in this corridor typically experience transit reentry delays of around 11 seconds.

Regional Transit

Regional transit service to and from the East Bay is provided via BART commuter rail service, Alameda-Contra Costa Transit (AC Transit) buses, and Water Emergency Transportation Authority (WETA) ferries. Transit service to and from the North Bay is provided via Golden Gate Transit (GGT) buses and ferries. Transit service to and from the Peninsula/South Bay is provided via Caltrain, BART, and San Mateo County Transit (SamTrans) buses. BART is located within 0.6-mile of the center of the project site and many Muni routes connect to the Balboa Park BART/Muni Station. Other regional transit services can be reached by bicycle or from various Muni or BART lines (some requiring a transfer). Regional transit providers and service are described below.

BART

BART provides regional commuter rail service between San Francisco and the East Bay (Antioch, Richmond, Dublin/Pleasanton and Warm Springs/South Fremont), as well as between San Francisco and San Mateo County (Daly City, SFO Airport, and Millbrae). Weekday hours of operation are between 4 a.m. and midnight. During the weekday p.m. peak period, headways are 5 to 15 minutes along each line. Within San Francisco, BART operates underground along Market Street to Civic Center Station where it turns south through the Mission District towards Daly City, running partially aboveground between Glen Park and Daly City stations. The BART stations nearest to the project study area is the Balboa Park BART/Muni Station at San Jose Avenue between Ocean Avenue and Geneva Avenue, about 0.6 mile away from the center of the project site.

Caltrain

Caltrain provides passenger rail service on the Peninsula between San Francisco and Downtown San Jose with several stops in San Mateo County and Santa Clara County. Some service is also available south of San Jose. Caltrain operates either local or express trains between 4:30 a.m. and midnight inbound (northbound) and 5 a.m. to midnight outbound (southbound). Caltrain service headways for Limited-Stop and Express (“Baby Bullet”) trains during the weekday a.m. and p.m. peak periods are 10 to 40 minutes, depending on the type of train. The peak direction of service is southbound during the weekday a.m. peak period (7 to 9 a.m.) and northbound during the weekday p.m. peak period (4 to 6 p.m.). Local service is not provided during peak periods.

Caltrain provides service to the Bayshore Station and the 22nd Street Station. The Bayshore Station, located on Tunnel Avenue between Beatty Avenue and Recycle Road is about 3.5 miles east of the project site, a 40-minute ride from Balboa Park BART/Muni Station on the Brisbane/Crocker BART Shuttle. The 22nd Street Station, located between Indiana Street and Pennsylvania Avenue is approximately 4.3 miles away, a 20-minute bus ride on the 8 Bayshore line.

AC Transit

AC Transit provides local bus service in western Alameda and Contra Costa Counties and has routes to San Francisco and San Mateo counties. The majority of AC Transit Transbay routes terminate at the Transbay Transit Center located at First and Natoma streets, approximately 5.8 miles northeast of the project site. This station can be reached by three BART lines (Antioch, Richmond, Dublin/Pleasanton and Warm Springs/South Fremont) that arrive/depart from the Balboa Park BART/Muni Station and by the K Ingleside.

Most Transbay bus lines are for peak period and peak direction (to San Francisco during the weekday a.m. peak period and from San Francisco during the weekday p.m. peak period), with headways of 15 to 30 minutes per route. The peak direction of service is into San Francisco during the weekday a.m. peak period and out of San Francisco during the weekday p.m. peak period.

San Francisco Bay Ferry, Operated by WETA

WETA is a regional public transit agency that operates ferry services on San Francisco Bay and coordinates the water transit response to regional emergencies. The San Francisco Ferry Terminal is located about 6.3 miles northeast of the project site and can be reached by K Ingleside and BART. WETA services operate from terminals in Alameda (Main Street and Harbor Bay), Oakland, San Francisco, South San Francisco, Richmond, and Vallejo/Mare Island. Ferry routes operate with 30- to 60-minute headways, depending on time and day of the week.

SamTrans

SamTrans provides bus service between San Mateo County and San Francisco. SamTrans operates three bus lines that serve downtown San Francisco. The closest SamTrans bus stops to the project site are located at the Transbay Transit Center (at First Street and Natoma Street). This station can be reached by three BART lines (Antioch, Richmond, Dublin/Pleasanton and Warm Springs/South Fremont) that arrive/depart from the Balboa Park BART/Muni Station and by the K Ingleside. SamTrans Route KX operates as a peak-only express route, Route 292 provides service throughout the day, and Route 397 operates as a late-night route. Headways during the weekday p.m. peak period are approximately 60 minutes for Route KX and 20 to 30 minutes for Route 292.

Golden Gate Transit

GGT, operated by the Golden Gate Bridge and Highway Transportation District, provides bus service between the North Bay (Marin and Sonoma counties) and San Francisco. It operates 22 commuter bus routes, 9 basic bus routes, and 16 ferry feeder bus routes (ferry feeder bus routes do not operate in San Francisco). Most bus routes serve either the Civic Center (via Van Ness Avenue and Mission Street) or the Financial District (via Battery and Sansome streets). Basic bus routes operate with 15- to 90-minute headways, depending on the time and day of the week. Commute and ferry feeder bus routes operate at intervals that are more frequent in the mornings and evenings. GGT stops are accessible with transfer from BART and K Ingleside.

Emergency Access Conditions

The following describes the closest emergency access facilities to the project site. In addition, the follow identifies any observed delays to emergency access operators adjacent to the project site.

There are five fire stations located within a less than 2-mile radius of the project site. The closest fire station (fire department station 15) is located at 1000 Ocean Avenue, at the corner of Ocean Avenue and Frida Kahlo Way, less than one block from the project site. Vehicles enter and exit the fire station from Ocean Avenue, west of Frida Kahlo Way. Fire department station 39 is located about 1.3 miles north of the project site at 1091 Portola Drive. Fire department station 33 is located about 1.3 miles southwest of the project site at 8 Capital Avenue. Fire department station 43 is located about 1.5 miles southeast of the project site at 720 Moscow Street. SFFD Station 19 is located about 1.5 miles west of the project site at 390 Buckingham Way.

The closest police station (Ingleside Police Station) is located at 1 Sergeant John V Young Lane, 1.3 miles east of the project site. The project site is located about 2.5 miles southwest of Sutter Pacific Medical Foundation at 3620 Cesar Chavez and 3.5 miles south of the UCSF Medical Center at 505 Parnassus Avenue.

Emergency vehicle access to the project site is currently provided from Lee Avenue and the City College parking lot access road. All streets providing direct access to the site are wide enough to provide adequate access for emergency vehicles. Vehicle traffic along Ocean Avenue currently impedes emergency vehicles exiting fire department station 15. During peak periods, vehicle queues extending back from the Ocean Avenue/Lee Avenue intersection were observed to occasionally partially block the fire station driveway. Driveway blockages were observed approximately five times during the weekday p.m. peak hour and each occurrence lasted between 10 and 20 seconds. No emergency vehicles were observed trying to exit the driveway during these times. Three of these events occurred when a vehicle was stopped behind a bus that was waiting for pedestrians to clear the crosswalk before turning into the City College Terminal. Two events occurred as a result of westbound queues extending back from the Ocean Avenue/Lee Avenue intersection and the queue cleared when the signal turned green. Generally, arterial roadways in the study area, such as Ocean Avenue, Geneva Avenue, and Frida Kahlo Way, provide enough clearance space to permit other vehicles to maneuver out of the path and yield right-of-way to the emergency vehicle.

Vehicle Miles Traveled

The PEIR included an evaluation of automobile delay (vehicle level of service) and did not include an evaluation of VMT. The San Francisco Planning Commission replaced automobile delay (vehicle level of service) with the VMT significance criteria (resolution 19579) in March 2016 (refer to Regulatory Framework for more discussion). Accordingly, this analysis does not contain a discussion of automobile delay impacts. Instead, the analysis assesses VMT and induced automobile travel impacts.

VMT per person (or per capita) is a measurement of the amount and distance that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. Many interdependent factors affect the amount and distance a person might drive. In particular, the built environment affects how many places a person can access within a given distance, time, and cost, using different ways of travels (e.g., private vehicle, public transit, bicycling, walking, etc.). Typically, low-density development located at great distances from other land uses and in areas with few options for ways of travel provides less access than a location with high density, mix of land uses, and numerous ways of travel. Therefore, low-density development typically generates more VMT compared to a similarly sized development located in urban areas.

Given these travel behavior factors, on average, persons living or working in San Francisco result in lower amounts of VMT per person than persons living or working elsewhere in the nine-county San Francisco Bay Area region. On a more granular level persons living or working in some areas of San Francisco result in lower amounts of VMT per person on average, than persons living or working elsewhere in San Francisco. The city displays different amounts of VMT per capita geographically through transportation analysis zones (TAZs).[79]

SFCTA uses the San Francisco Chained Activity Modeling Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different TAZs. The transportation authority calibrates travel behavior in the model based on observed behavior from the California Household Travel Survey 2010–2012, census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. The model uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day.

The model estimates daily VMT for residential, office, and retail land use types. For residential and office uses, the transportation authority uses tour-based analysis. A tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from a site. For retail uses, the transportation authority uses trip-based analysis. A trip-based analysis counts VMT from individual trips to and from a site (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail sites because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT.[80,81,82]

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79 Planners use these zones as part of transportation planning models for transportation analyses and other planning purposes. The zones 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.

80 To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.

81 Retail travel is not explicitly captured in San Francisco chained activity modeling process, rather, there is a generic "Other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other nonwork, 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; school enrollment, and number of households) represents the size, or attraction, of the zone for this type of "Other" purpose travel.

82 San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A*, March 3, 2016.

Table 3.B-9, Existing Daily Vehicle Miles Traveled per Capita, presents the existing average daily VMT per capita for residents, employees, and visitors for the nine-county San Francisco Bay Area and for TAZ 915, the TAZ in which the project site is located. The boundaries of TAZ 915 are generally Miramar Avenue, Wildwood Way, Greenwood Avenue, Frida Kahlo Way, and Ocean Avenue. As shown in Table 3.B-9, the current existing average daily VMT per capita for the various land uses at the project site is less than the regional Bay Area averages.

TABLE 3.B-9
EXISTING DAILY VEHICLE MILES TRAVELED PER CAPITA

Land Use	Bay Area Regional Average	Project TAZ (TAZ 915)
Residential	17.2	11.7
Childcare	19.1	13.0
Retail	14.9	1.9

SOURCE: San Francisco Planning Department, Transportation Information Map, *http://sfplanninggis.org/TIM/*.

NOTE:

Childcare is an "other land use", meaning a land use other than residential, retail, and office. California Governor's Office of Planning and Research has not provided proposed screening criteria or thresholds of significance for other types of land uses, other than those that meet the definition of a small project. Consistent with SF Guidelines, 2019 (p. L-16), childcare is treated as an "office use" for purposes of screening and analysis. The rationale being that travel characteristics associated with childcare facilities are most similar to the office land use.

Loading Conditions

The following describes the absence, discontinuity, or presence of features related to loading in the study area. The description includes an assessment of commercial and passenger on- and off-street spaces, hour restrictions, and usage. In addition, the following identifies any potentially or observed hazardous conditions or delays to public transit operations due to loading activities.

Freight Loading

There are no existing designated freight loading spaces on the project site. Existing on-street freight loading zones (yellow zones) are located on Ocean Avenue (three metered spaces east of Brighton Avenue and four metered spaces west of Brighton Avenue) and Frida Kahlo Way (about 70 linear feet located north of City College Terminal). On-street commercial loading zones are in effect Monday through Saturday, 8 a.m. to 6 p.m.

A loading dock and off-street freight loading area serving Whole Foods is located off the Lee Avenue extension north of Ocean Avenue. Information on delivery vehicle and loading activity for this area was obtained from Whole Foods at 1150 Ocean Avenue and supplemental observations were conducted along Lee Avenue north of Ocean Avenue, including at the delivery truck access easement behind 1100 Ocean Avenue. This information is summarized in this section.

1150 Ocean Avenue Whole Foods Loading Survey

The Whole Foods store receives about 25 to 30 deliveries on Monday through Saturday with about 8 to 12 deliveries on Sundays.[83] Loading occurs within the delivery truck access easement, off-street loading facility, and along both sides of Lee Avenue. Both sides of Lee Avenue have No Parking restrictions.[84] Deliveries occur between 6:30 a.m. and 3 p.m. and from 5 to 10:30 p.m. Evening delivery is limited to three larger delivery trucks measuring about 53 feet in length. The off-street loading dock is occupied continuously from 7 a.m. to 1 p.m. Vehicles accessing the loading dock pull head first into the delivery truck access easement and reverse across Lee Avenue into the loading dock. Trash and waste/recycling bins are stored at the end of Lee Avenue and loading occurs from Lee Avenue. Garbage trucks come on a daily basis. Delivery vehicle types range from single-unit box trucks and delivery vans to semi-trucks. To utilize the loading dock, semi-trucks pull head first into the delivery truck access easement and reverse across Lee Avenue into the loading dock. During the month of November there are two 53-foot-long storage units along Lee Avenue that contain holiday meals.

Lee Avenue Loading Data

Loading data was collected on Tuesday March 26, 2019, when City College was in session, and is provided in Appendix C3, Freight Loading Data. Loading data was collected continuously between 5 a.m. and 10 p.m. and included loading activity within the Whole Foods delivery truck access easement, and both sides of Lee Avenue north of Ocean Avenue. Data was collected by video camera and was manually reviewed to record the location, vehicle type,[85] time in, time out, duration of stay, and whether the delivery was for Whole Foods or another location.

There were 76 total loading events observed over the 17-hour time period, including 52 (or 68 percent) related to Whole Foods. The following discussion pertains to Whole Foods-related deliveries only.

- **Duration of Stay:** Vehicles were stopped for an average duration of 23 minutes and 35 seconds and a median duration of 13 minutes. One vehicle was stopped for over 5 hours and 35 minutes[86] and the minimum length of time a vehicle was stopped was observed to be 3 minutes and 55 seconds.
- **Time Period of Activity:** A total of 43 of the 52 loading events (83 percent) activity occurred within the five-hour time period between 7 a.m. and 12 p.m. Three events occurred prior to 7 a.m. and the remaining six events occurred between 1 and 9 p.m.
- **Peak Activity Levels:** The peak hour of loading arrivals occurred at 11 a.m. (10 arrivals). There were nine arrivals at 7 and 9 a.m. There was a maximum of six vehicles conducting loading at

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83 Information provided by Whole Foods 1150 Ocean Avenue Store Manager on February 5, 2019, and April 3, 2019.

84 The delivery truck access easement north of 1100 Ocean Avenue allows for backing large trucks into the Whole Foods loading dock. However, it is also used for loading, in which drivers leave their trucks and deliver goods.

85 The Federal Highway Administration (FHWA) 13-category classification rule set, which is currently used for most federal reporting requirements and serves as the basis for most state vehicle classification counting efforts, was used to classify the vehicles. FHWA Vehicle classification definitions are available online: *https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/13091/002.cfm*, accessed April 4, 2019.

86 One vehicle was present at the beginning of the data collection period (5 a.m.) and departed at 10:34 a.m. This vehicle was stopped on Lee Avenue for a duration of over 5.5 hours. However, this length of stay does not represent typical turnover during hours of operation and is therefore excluded from the calculation of typical average and maximum duration.

one time, including one vehicle within the off-street loading dock, two vehicles within the delivery truck access easement, and three vehicles on the west side of Lee Avenue. This peak occurred at approximately 11 a.m.

- **Location:** The majority of delivery vehicles conducted curbside loading from Lee Avenue. There were 31 vehicles (58 percent) stopped on Lee Avenue while 12 vehicles (23 percent) utilized the delivery truck access easement and the remaining nine vehicles (17 percent) utilized the off-street loading dock.
- **Vehicle Type:** A variety of vehicle types were observed conducting loading activity. The majority of delivery vehicles were single unit trucks (FHWA class 3 and FHWA class 5) and measured about 30 feet in length. The largest vehicles observed were five axle single trailer trucks (FHWA class 9). These vehicles typically measure about 55 feet in length.

This level of existing loading peak hour Whole Foods curbside demand along Lee Avenue, equates to approximately 180 linear feet for five delivery/service vehicles of approximately 36 feet in length, including four feet between vehicles to load/unload goods.[87]

Freight Loading Observations

Freight loading observations were conducted on Tuesday August 7, 2018, Tuesday March 26, 2019, and Thursday April 4, 2019. Observations were conducted between 10 a.m. and 1 p.m. to supplement the detailed video data collection on Lee Avenue north of Ocean Avenue that was collected continuously between 5 a.m. and 10 p.m. The 10 a.m. to 1 p.m. timeframe was selected as it represents the typical peak period of freight loading activity and includes the observed peak hour of freight loading activity near the site, which occurred around 11 a.m. Freight loading activity within existing spaces along Ocean Avenue and Frida Kahlo Way, within the Whole Foods delivery truck access easement, and along both sides of Lee Avenue north of Ocean Avenue were observed.

During the observation period, a maximum of four of the existing on-street freight loading zones (yellow zones) on Ocean Avenue were observed to be occupied at any given time. The existing freight loading zone on Frida Kahlo Way (about 70 linear feet located north of City College Terminal) was not occupied during the observation period. No double parking was observed and vehicles entering/exiting the on-street loading spaces were not observed to disrupt vehicle or public transit operations in the adjacent travel lane.

During the observation period, freight and delivery/service vehicles were observed to stop on both sides of Lee Avenue to load/unload goods. No double-parking or delays to public transit operations were observed. People were observed to use hand carts to transport goods between vehicles and the loading dock. If vehicles were parked on the east side of Lee Avenue, across from the loading dock entrance, people were observed to take the shortest and most direct route across the street instead of using the crosswalk at Ocean Avenue. Drivers exiting the Whole Foods garage were observed to yield to people crossing the street. Although crossing a street outside of a designated crosswalk can create

[87] This includes both the three on-street trucks observed on Lee Avenue and the two off-street trucks observed in the delivery truck access easement north of the building at 1100 Ocean Avenue, east of Lee Avenue, because this easement would no longer be available for loading operations, but rather would only be accessible to trucks seeking to back into the Whole Foods loading dock.

conflicts, conflicts between people loading/unloading goods and other modes were not observed because Lee Avenue contains low vehicle, bicycle, and pedestrian volumes.

Passenger Loading

Passenger loading observations were conducted on Tuesday August 7, 2018, Tuesday March 26, 2019, and Thursday April 4, 2019. Observations were conducted between 10 a.m. and 1 p.m. to supplement the detailed video data collection on Lee Avenue north of Ocean Avenue that was collected continuously between 5 a.m. and 10 p.m. The 10 a.m. to 1 p.m. was selected as it includes the observed peak period of passenger loading activity within the project's TAZ based on citywide data reported in the TNCs Today Data Explorer. Passenger loading activity along Ocean Avenue and Frida Kahlo Way, within the Whole Foods delivery truck access easement, and along both sides of Lee Avenue north of Ocean Avenue were observed. Passenger loading includes pick-up and drop-off conducted in private vehicles and for-hire vehicles (e.g., TNCs and taxis).

There are no existing designated passenger loading spaces on the project site. One existing accessible on-street passenger loading (white curb) zone is located on Ocean Avenue at Plymouth Avenue outside of the Ingleside Branch Library. No passenger loading/unloading activity was observed to occur within the designated on-street passenger loading zone. However, passenger loading activity was observed to occur in available on-street parking spaces along Ocean Avenue and Frida Kahlo Way, along both sides of Lee Avenue north of Ocean Avenue, and within the delivery truck access easement behind 1100 Ocean Avenue that serves Whole Foods delivery vehicles.

During the three-hour observation period, two drivers in TNC vehicles stopped in the delivery truck access easement to drop off passengers and one driver in a private vehicle waited to pick-up a passenger. Based on the additional loading data collected on Tuesday March 26, 2019, during the 17-hour detailed data collection period between 5 a.m. and 10 p.m., a total of five passenger vehicles were observed loading/unloading passengers along Lee Avenue north of Ocean Avenue and one passenger vehicle was observed loading/unloading passengers within the delivery truck access easement. Because Lee Avenue is a dead end street with low vehicle, bicycle, and pedestrian volumes, conflicts between passenger loading and other modes were not observed. Additionally, because most delivery vehicles utilized Lee Avenue to conduct loading/unloading and deliveries from trucks that require use of the delivery truck access easement to maneuver into the off-street loading dock are rare, passenger loading within the delivery truck access easement was not observed to disrupt or create hazardous conditions for freight loading activity.

According to citywide data reported in the TNCs Today Data Explorer, the peak weekday of TNC activity occurs on a Thursday.[88,89] A total of 292 daily pick-ups and drop-offs occurred within the project's TAZ (TAZ 915) on a Thursday and the peak hours of TNC activity occurred between 9 and 10 a.m. (17 pick-ups and 16 drop-offs) and between 11 a.m. and 12 p.m. (16 pick-ups and 16 drop-offs) and steadily declined through the afternoon hours.

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88 SFCTA, TNCs Today Data Explorer, *http://tncstoday.sfcta.org/*, accessed February 8, 2019.

89 The TNCs Today Data Explorer provides an estimate of the number of TNC (Uber and Lyft) pickups and drop-offs in San Francisco by location and by time of day. Uber and Lyft trips are combined and only rides that occur within the city limits are counted. Data is averaged from several weeks in fall 2016.

Parking Conditions

California Senate Bill (SB) 743 amended CEQA by adding California Public Resources Code (PRC) section 21099 regarding the analysis of parking impacts for certain urban infill projects in transit priority areas.[90] PRC section 21099(d), effective January 1, 2014, provides that "… parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." Accordingly, parking is no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all three criteria established in the statute.

The proposed project meets all of the criteria, and thus the transportation impact analysis does not consider the adequacy of parking in determining the significance of project impacts under CEQA. Parking is not discussed further in this SEIR.

3.B.5 Regulatory Framework

This section provides a summary of the plans and policies of the City and County of San Francisco, and regional, state, and federal agencies that have policy and regulatory control over the project site. No federal regulations, plans, or policies are relevant to the project.

State

CEQA Section 21099(b)(1) (SB 743)

CEQA section 21099(b)(1) requires that the State Office of Planning and Research develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of 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 CEQA section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or 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 a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* recommending that transportation impacts for projects be measured using a VMT metric.[91] On March 3, 2016, based on compelling evidence in that document and on the department's independent review of the literature on level of service and VMT, the San Francisco Planning Commission adopted the Office of Planning and Research's recommendation to use the VMT

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[90] A "transit priority area" is defined as an area within 0.5 mile of an existing or planned major transit stop. A "major transit stop" is defined in California Public Resources Code section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. A map of San Francisco's Transit Priority Areas is available online at *http://sfmea.sfplanning.org/Map%20of%20San%20Francisco%20Transit%20Priority%20Areas.pdf*, accessed May 28, 2015.

[91] California 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.

metric instead of automobile delay to evaluate the transportation impacts of projects (resolution 19579). In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the section implementing SB 743 (section 15064.3). The Office of Planning and Research developed a *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.[92]

Regional

Plan Bay Area

Plan Bay Area 2040 is a state-mandated, integrated long-range transportation and land use plan. As required by SB 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 plan meets those requirements. In addition, the plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The 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 plan identifies priority development areas. The agencies estimate approximately 77 percent of housing and 55 percent of job growth will occur in the Priority Development Area between 2010 and 2040. The project is located in the Balboa Park Priority Development Area.

Local

Transit First Policy

In 1973, the San Francisco Board of Supervisors declared that public transit be given priority over other vehicles on San Francisco streets. In 1998, the San Francisco voters amended the City Charter (charter article 8A, section 8A.115) to include a transit first policy. The San Francisco General Plan incorporates the policy and the policy requires all city boards, commissions, and departments to implement principles that, among others, encourage the use of public rights-of-way by people walking, bicycling, and riding public transit above the use of the personal automobile.

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

92 California Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 18, 2018, *http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf*, accessed February 7, 2019.

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 the nine aspects of the citywide transportation system: General, Regional Transportation, Congestion Management, Vehicle Circulation, Transit, Pedestrian, Bicycles, Citywide Parking, and Goods Management. The Transportation Element references San Francisco's Transit First Policy in its introduction and contains objectives and policies that are directly pertinent to consideration of the project, including objectives related to prioritizing sustainable modes of travel, integrating and connecting land use development and transportation investments, and designing streets for walking, biking, and public transit.

Balboa Park Station Area Plan

The area plan was adopted in 2009 and is informed by three key principles: improve the area's public realm, make the transit experience safer and more enjoyable, and improve the economic vitality of the Ocean Avenue Neighborhood Commercial District. It supports developing the Balboa Reservoir site for housing and includes policies designed to increase affordable housing for a variety of incomes; create open space; knit together isolated areas of the neighborhood; integrate diverse land uses with the area's commercial and transit corridors; design streets for walking, biking and public transit; and otherwise strengthen the Balboa Park area.

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.

San Francisco Regulations for Working in San Francisco Streets (Blue Book)

The San Francisco Regulations for Working in San Francisco Streets (the blue book) contains regulations that are prepared and regularly updated by the SFMTA, under the authority derived from the San Francisco Transportation Code, to serve 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 pedestrians, bicycle, 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 it is controlled by agencies other than the SFMTA.

In addition to the regulations presented in the manual, all 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 is responsible if such controls do not meet the guidance and requirements established by this manual and any applicable state requirements.

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 only use the fee towards 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" intended 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 in the menu overlap with requirements elsewhere in the planning code (e.g., bicycle parking, car-share parking). Each development project's TDM plan require routine monitoring and reporting to the planning department to demonstrate compliance.

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)).

3.B.6 Impacts and Mitigation Measures

Appendix G Questions and Significance Criteria

San Francisco Administrative Code chapter 31 directs the department to identify environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G. As it relates to transportation and circulation, Appendix G asks whether 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(b), which pertains to VMT;
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and
- Result in inadequate emergency access.

The department uses significance criteria to facilitate the transportation analysis and address the Appendix G checklist. The department separates the significance criteria into construction and operation.

Construction

Construction of the project would have a significant effect on the environment if it would require a substantially extended duration or intense activity; and the effects would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with accessibility for people walking or bicycling or substantially delay public transit.

Operation

The operational impact analysis addresses the following five significance criteria. A project would have a significant effect if it would:

- Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations;
- Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or results in inadequate emergency access;
- Substantially delay public transit;
- Cause substantial additional VMT or substantially inducing 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; and
- Result in a loading deficit and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving; or substantially delay public transit.

Approach to Analysis

Project Options

For purposes of the transportation analysis, two project options were analyzed to capture the range of potential impacts related to possible development on the project site. Transportation-related impacts associated with each project option are evaluated and presented. The project options are described in detail in SEIR Chapter 2, Project Description, and summarized below.

- **Developer's Proposed Option**—The Developer's Proposed Option would consist of 1,100 dwelling units, approximately 10,000 gross square feet (gsf) of community space (childcare and a community room for public use), and approximately 7,500 gsf of retail. Up to 550 residential parking spaces and 750 public parking spaces would be constructed.
- **Additional Housing Option**—The Additional Housing Option would consist of 1,550 dwelling units, approximately 10,000 gsf of community space (childcare and a community room for public use), and approximately 7,500 gsf of retail. Up to 650 residential parking spaces and no public parking spaces would be constructed.

Project Features

The following describes transportation-related features of the project not described in SEIR Chapter 2, Project Description. These features would apply to both project options, except as noted.

Construction Features

The proposed project is anticipated to be constructed in three phases over the course of six years. The three development phases are Phase 0 (grading and site infrastructure, 1 year), Phase 1 (town homes and inner blocks, 2.5 years), and Phase 2 (Blocks A, B, G, and H, 2.5 years). No parking lane or sidewalk closures would be required during construction.

The proposed project would minimize the need for exporting materials by recycling on-site during Phase 0. The number of construction-related truck trips would range from an average of 0 daily round-trips (during Phase 0 for both project options) to a maximum of 320 daily round-trips (during Phase 1 for the Additional Housing Option) for material delivery and removal. The primary haul routes for construction truck traffic would be:

- Entering the site: I-280 and Ocean Avenue westbound, continue northbound on Frida Kahlo Way to access the site at North Access Road
- Exiting the site: Turn right onto Frida Kahlo Way at Cloud Circle (S), continue southbound on Frida Kahlo Way and turn left onto Ocean Avenue eastbound

The number of construction workers accessing the site would range from an average of 33 workers per day (during Phase 0 for both project options) to a maximum of 460 workers per day (during Phase 1 for the Additional Housing Option). On-site parking would be provided for construction worker vehicles throughout the construction period.

The preliminary construction schedule and phasing is described in more detail in SEIR Section 2.G, Project Construction Overview and Schedule, p. 2-38, and under Impact TR-1, pp. 3.B-60.

Roadway Network Features

Circulation changes implemented by the proposed project include the extension of Lee Avenue along the eastern border of the project site to connect to proposed interior street network. Lee Avenue between Ocean Avenue and the project site would include one 10-foot-wide northbound lane and would reconfigure the southbound Lee Avenue approach to Ocean Avenue from one all-movement lane to one 10-foot-wide southbound through/right-turn lane and one 10-foot-wide southbound left-turn lane. This change from two travel lanes to three travel lanes (with shared with bicycles, as discussed below) would preclude the use of curb space along Lee Avenue for freight loading, as currently occurs, because trucks stopped for loading would obstruct one of the travel lanes.

The proposed interior streets include the Lee Avenue extension, and new internal streets: North, South, and West streets. Proposed street sections are illustrated in SEIR Chapter 2, Project Description, Figures 2-13 to 2-15, pp. 2-28 to 2-32. The proposed project would not eliminate or relocate existing curb cuts.

Walking Network Features

The proposed project would be integrated with the existing street grid. Pedestrian paseos (12 feet wide) would be developed to align with Brighton Avenue to the south and San Ramon Way to the west to provide access for people walking. The north–south Brighton Avenue extension and the east–west San Ramon Way extension to the project site would be closed to vehicular traffic. Other access for people walking to the site would be provided from a shared public way at Plymouth Avenue and from Unity Plaza. The proposed street type plan and representative sections are illustrated in SEIR Chapter 2, Project Description, Figure 2-12, p. 2-27, and Figure 2-17, p. 2-35, respectively.

On interior streets, the proposed project would provide sidewalks with a 6-foot-wide planting/furnishing strip and parking lane (aka courtesy strip) on both sides. Sidewalks on Lee Avenue would be approximately 6.5 feet wide and sidewalks on North, South, and West streets would be approximately 6 feet wide. Raised crosswalks would be installed at the Lee Avenue/SFPUC Open Space intersection and at the West Street/San Ramon Way extension/Central Park open space entry point. Advance pedestrian warning signs and advance yield lines would be placed in advance of the crosswalks. Raised crosswalks extend the sidewalk across the road and bring motor vehicles to the same level as people walking. Raised crosswalks improve accessibility by enabling people to cross at a nearly constant grade without the need for a curb ramp and make the people crossing more visible to approaching motorists. Raised crosswalks have a trapezoid-shaped cross-section that slows motorists at the crossing. Proposed street sections are illustrated in SEIR Chapter 2, Project Description, Figures 2-13 to 2-15, pp. 2-28 to 2-32.

Bicycle Network Features

The proposed project would provide a class II (bike lanes) or class IV (separated bikeway) facility on the Lee Avenue Extension and class III facilities (bike route, or shared lanes) would be provided on interior streets, North, South, and West streets and the Access Road at the north end of the site. Lee Avenue between Ocean Avenue and the project site would include a Class III shared roadway bicycle facility. Shared access for people walking and biking would be provided at the shared public way Plymouth Avenue/SFPUC Open Space. The proposed bicycle circulation is illustrated in SEIR Chapter 2, Project Description, Figure 2-16, p. 2-34.

Both project options would provide class 1 bicycle parking on the ground floor or in the first below-grade level of each buildings. Class 2 bicycle parking spaces would be located within public right-of-way adjacent to each building entrance or in the publicly accessible open space. The Developer's Proposed Option would provide at least 936 class 1 and 75 class 2 bicycle parking spaces.[93] The Additional Housing Option would provide at least 1,100 class 1 and 80 class 2 bicycle parking spaces.

Transit Network Features

The proposed project does not include any transit network features, such as modifications to transit service, operations, or amenities.

[93] Planning Code section 155.1(a) 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."

Loading Features

The Developer's Proposed Option would include six on-street freight loading areas and eight passenger loading areas along the internal streets.

The Additional Housing Option would include six on-street freight loading areas and eight passenger loading areas along the internal streets.

Potential locations of on-street parking and loading areas are shown in SEIR Chapter 2, Project Description, Figure 2-11, p. 2-25. Passenger loading/unloading zones would be located in proximity to building entrances.

Transportation Demand Management (TDM) Plan

San Francisco Planning Code section 169 identifies the applicability of the transportation demand management (TDM) Program and establishes the TDM Program Standards for new development. Based on these requirements, the project is subject to the TDM Program and must submit a TDM Plan. The proposed project would include a TDM plan that would implement some or all of the following measures to reduce vehicle trips and encourage sustainable modes of transportation.

- Improve walking conditions by providing wide sidewalks and incorporating streetscape elements that encourage active transportation;
- Provide secure bike parking above code requirements;
- Provide a bike repair station in each building;
- Provide car share memberships and car share parking spaces;
- Provide delivery supportive amenities including a temporary storage location for deliveries;
- Include family TDM amenities including storage units, cargo bikes and cargo bike parking spaces, and collapsible shopping carts;
- Childcare facility provided onsite;
- Install multimodal wayfinding signage located internally and externally directing people to transit, bicycle parking and amenities, car share parking, and shuttle/carpool pick-up/drop-off locations;
- Install real-time transportation information displays in building lobbies at each major entrance/exit showing transit lines, walk time to transit stops, availability of on-site car-share vehicles;
- Include on-site affordable housing;
- Provide reduced parking supply in comparison with the neighborhood average parking rate;
- Unbundle parking;
- Provide for bikeshare availability on site; and
- Provide tailored transportation marketing.

Consistent with requirements outlined in San Francisco Planning Code section 169, the project sponsor commits to monitoring, reporting, and compliance throughout the life of the project to ensure the TDM Plan is being implemented correctly, on an ongoing basis.

Approach to Impact Analysis Methodology

The following summarizes the methodology for analyzing transportation impacts and information considered in developing travel demand estimates for the Developer's Proposed Option and the Additional Housing Option. In addition, the following summarizes the methodology for analyzing and any quantitative thresholds of significance for determining transportation impacts under existing plus project conditions. The travel demand and impact analysis methodology uses the data and guidance within the planning department's *Transportation Impact Analysis Guidelines* (2019).[94] If the methodology differs than that in the guidelines, the following summarizes such differences.

Analysis Periods and Geographic Scope

The geographic scope of potential transportation impacts encompasses the transportation study area and study intersections. The transportation study area includes all aspects of the transportation network within generally 0.25 mile of the center of the project site, bounded by Frida Kahlo Way (about 710 feet to the east), Miramar Avenue (about 970 feet to the west), Holloway Avenue (about 1,400 feet to the south), and Monterey Boulevard (about 2,000 feet to the north). The transportation study area and study intersections are shown in Figure 3.B-1, p. 3.B-7.

The analysis of the proposed project was conducted for existing plus project and 2040 cumulative conditions. The existing plus project conditions assess the near-term impacts of the proposed project, while 2040 cumulative conditions assess the near-term and long-term impacts of the proposed project in combination with cumulative development. Cumulative transportation impacts are assessed based on a review of the foreseeable future projects (a list-based approach) that are located within the project's study area (see SEIR Section 3.A.6, Approach to Cumulative Impact Analysis, p. 3.A-8, for a detailed description of these projects). At the time of this SEIR preparation, there is not enough information to conduct a quantitative cumulative analyses of City College's Ocean Campus facilities master plan projects. Therefore, the cumulative analysis for this SEIR will qualitatively assess the impacts of these Ocean Campus projects identified in Table 3.A-2, City College Ocean Campus Projects, p. 3.A-13, collectively as the "Facilities Master Plan" using best available information at the time of this SEIR preparation.

In San Francisco, the weekday extended p.m. peak period (3 to 7 p.m.) is typically the period when the most overall travel happens. The analysis conducted in this SEIR focuses on a two-hour p.m. period between 4 and 6 p.m. Given the size and the proposed uses of the project, as well as travel characteristics of City College, the methodology and analysis also consider the a.m. peak period (7 to 9 a.m.). Although a substantial amount of travel occurs throughout the day and impacts from projects would typically be less during other periods, for most topics, the methodology focuses on the a.m. and p.m. peak periods. The travel demand presents daily and peak a.m. and p.m. person trip and vehicle trip generation. In addition, for loading, the methodology uses the 11 a.m. to 1 p.m. period to assess commercial vehicle loading demand and 4 to 6 p.m. period to assess passenger vehicle loading demand.

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94 San Francisco Planning Department, Transportation Impact Analysis Guidelines for Environmental Review – Update, *http://default.sfplanning.org/publications_reports/TIA_Guidelines.pdf*, accessed February 18, 2019.

Project Travel Demand Methodology and Results

Project travel demand refers to the number, type, and common destinations of new trips that people would take to and from the project. The memorandum containing the detailed methodology and results for the project travel demand is included in SEIR Appendix C1, Travel Demand Memorandum. This section summarizes the travel demand memorandum.

Existing Site Trips

Current driveway counts are shown in **Figure 3.B-4, Existing Vehicle Trips at Site Driveways**, and summarized in **Table 3.B-10, Existing Site Driveway Counts**, were collected at the entrances to the east basin parking lot (also known as the "upper basin") during the weekday a.m. and p.m. peak periods on Thursday December 7, 2017, when City College was in session.

TABLE 3.B-10
EXISTING SITE DRIVEWAY COUNTS

	Weekday A.M. Peak Hour[a]			Weekday P.M. Peak Hour[b]		
City College Parking Lot Entrance	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
North (intersection 15)	141	144	**285**	83	130	**213**
South (intersection 16)	194	20	**214**	121	153	**274**
Total	**335**	**164**	**499**	**204**	**283**	**487**

SOURCE: Quality Counts, 2017.

NOTES:

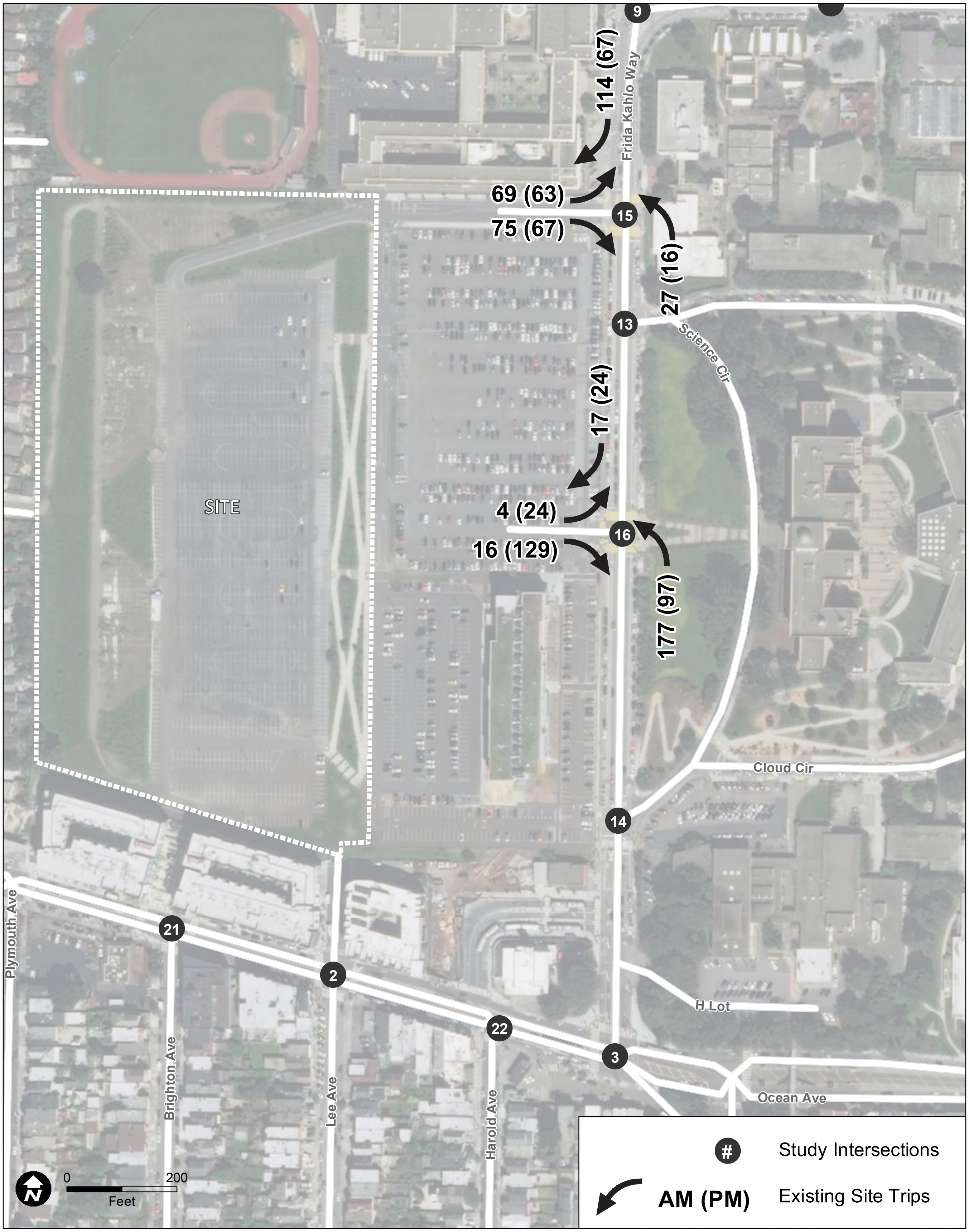
a The weekday a.m. peak hour of vehicle activity occurred between 7:35 and 8:35 a.m.

b The weekday p.m. peak hour of vehicle activity occurred between 5 and 6 p.m.

As shown in Table 3.B-10, there were a total of 499 vehicles (335 inbound, 164 outbound) and 487 vehicles (204 inbound, 283 outbound) observed entering the east basin during the weekday a.m. and p.m. peak hours, respectively. The existing east basin parking lot driveways also serve the parking lot in the west basin (the project site, also known as the "lower basin"). As such, a portion of the vehicle trips counted at the site driveways would be destined for the project site and the remaining vehicle trips would be destined for the east basin. The number of vehicle trips traveling to/from the project site was estimated using parking occupancy and accumulation data collected at the east and west basins and the vehicle turning movement counts collected at the existing site driveways. Overall, it was estimated that a total of 97 vehicle trips (48 inbound, 49 outbound) and 72 vehicle trips (28 inbound, 44 outbound) were traveling to/from the project site.

Project Trips

The travel demand forecast methodology consists of four steps: (1) trip generation, (2) ways people travel, (3) common destinations, and (4) assignment. The following summarizes each of these steps.



Source: Kittelson & Associates, Inc., 2019

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Figure 3.B-4
Existing Vehicle Trips at Site Driveway

Step 1. Trip Generation

Trip generation refers to the number of estimated trips people would take to and from the project, regardless of the way they travel (see step 2 below). The following refers to these trips as person trips. The following applies person trip rates, accounting for the size and type of land use, to estimate the number of project person trips. **Table 3.B-11, Person-Trip Generation Estimates by Land Use**, presents the estimates of the number of daily, a.m. peak period, and p.m. peak period project person trips by land use for both the Developer's Proposed Option and the Additional Housing Option.

**TABLE 3.B-11
PERSON-TRIP GENERATION ESTIMATES BY LAND USE**

	Developer's Proposed Option			Additional Housing Option		
Land Use	**Daily**	**A.M. Peak Hour**	**P.M. Peak Hour**	**Daily**	**A.M. Peak Hour**	**P.M. Peak Hour**
Residential	9,386	635	834	13,226	895	1,176
Retail	1,123	77	101	1,123	77	101
Daycare	476	116	117	476	116	117
Total	**10,985**	**828**	**1,052**	**14,825**	**1,088**	**1,394**

SOURCE: SF Guidelines, 2019. ITE, 10th Edition, 2017.

Step 2. Ways People Travel

Ways people travel, also known as mode split, refers to the estimated way or method people travel (e.g., walking, bicycling, transit, etc.). **Table 3.B-12, Mode Split by Land Use**, provides the estimated percentage of a.m. and p.m. peak period project trips by different ways of travel. The percentages account for the geographic location of the project site and apply to both the Developer's Proposed Option and the Additional Housing Option.

**TABLE 3.B-12
MODE SPLIT BY LAND USE**

Mode	Residential	Retail	Daycare
Auto	40%	54%	42%
Taxi/TNC	4%	1%	3%
Transit	19%	16%	19%
Walk	33%	28%	32%
Bike	4%	1%	4%
Total	**100%**	**100%**	**100%**

SOURCE: SF Guidelines, 2019; ITE, 10th Edition, 2017.
NOTES:
TNC = Transportation Network Company
The mode split applies to both the Developer's Proposed Option and the Additional Housing Option.

Table 3.B-13, Person-Trip Generation Estimates by Mode and Land Use, provides the estimated number of a.m. and p.m. peak period project trips by different ways of travel. The "auto" person trip row consists of persons traveling by private auto, carpool, and for-hire vehicle (e.g., taxi or TNC). The vehicle trip row is less than the auto trip row because it accounts for carpooling or the number of people in a vehicle, also known as average vehicle occupancy. The "transit" column consists of public local and regional transit. **Table 3.B-14, Vehicle Trip Estimates by Land Use**, provides the estimated number of daily, a.m. and p.m. peak hour project vehicle trips.

TABLE 3.B-13
PERSON-TRIP GENERATION ESTIMATES BY MODE AND LAND USE

Mode	Weekday A.M. Peak Hour				Weekday P.M. Peak Hour			
	Retail	Daycare	Residential	Total	Retail	Daycare	Residential	Total
Developer's Proposed Option								
Auto	42	48	254	**344**	55	49	333	**437**
Taxi/TNC	1	4	22	**27**	1	4	29	**34**
Transit	12	21	120	**153**	16	22	157	**195**
Walk	21	39	215	**275**	28	38	283	**349**
Bike	1	4	24	**29**	1	4	32	**37**
Total Person Trips	**77**	**116**	**635**	**828**	**101**	**117**	**834**	**935**
Vehicle Trips	*24*	*30*	*195*	*249*	*31*	*30*	*257*	*318*
Additional Housing Option								
Auto	42	48	**358**	448	55	49	470	574
Taxi/TNC	1	4	**31**	36	1	4	41	46
Transit	12	21	**169**	202	16	22	221	259
Walk	21	39	**303**	363	28	38	399	465
Bike	1	4	**34**	39	1	4	45	50
Total Person Trips	**77**	**116**	**895**	**1,088**	**101**	**117**	**1,176**	**1,394**
Vehicle Trips	*24*	*30*	*275*	*329*	*31*	*30*	*362*	*423*

SOURCE: SF Guidelines, 2019. ITE, 10th Edition, 2017.
NOTES:
Numbers may not sum to total due to rounding.
TNC = Transportation Network Company

Step 3. Common Destinations

Common destinations, also known as trip distribution, refers to the estimated number of trips people would take to (inbound) and from (outbound) the project and another place (e.g., another neighborhood). Common destinations consist of eight San Francisco neighborhoods, east bay, north bay, and the south bay. **Table 3.B-15, Project Vehicle and Transit Trip Distribution**, provides the estimated percentage of a.m. and p.m. peak period project vehicle and transit trips to the common destinations. The percentages account for the geographic location of the project site and apply to both the Developer's Proposed Option and the Additional Housing Option. **Figure 3.B-5, Project Vehicle and Transit Trip Distribution**, displays the information from Table 3.B-15 on a map.

TABLE 3.B-14
VEHICLE TRIP ESTIMATES BY LAND USE

Land Use	Daily	Weekday A.M. Peak Hour[a]			Weekday P.M. Peak Hour		
		In	Out	Total	In	Out	Total
Developer's Proposed Option							
Residential	2,842	63	132	**195**	175	82	**257**
Retail	192	13	11	**24**	14	17	**31**
Daycare	134	16	14	**30**	14	16	**30**
Total Vehicle Trips	**3,168**	**92**	**157**	**249**	**203**	**115**	**318**
Additional Housing Option							
Residential	4,116	88	187	**275**	246	116	**362**
Retail	192	13	11	**24**	14	17	**31**
Daycare	134	16	14	**30**	14	16	**30**
Total Vehicle Trips	**4,442**	**117**	**212**	**329**	**274**	**149**	**423**

SOURCE: SF Guidelines, 2019; ITE, 10th Edition, 2017.

NOTES:

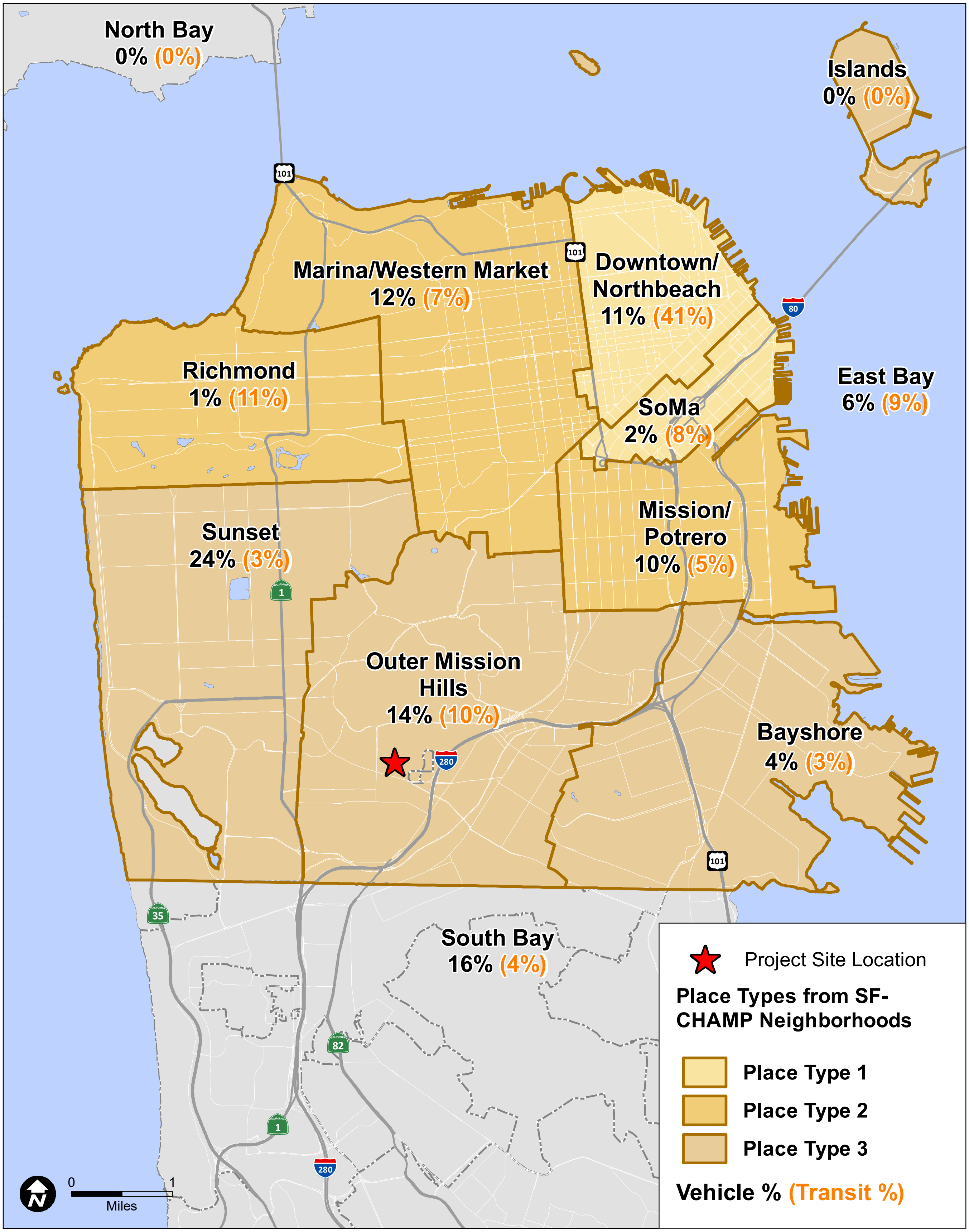
Totals may not sum due to rounding.

a Weekday a.m. peak hour values are calculated using the ITE Trip Generation Handbook 10th edition ratios for a.m. to p.m. for each use. The distribution of weekday a.m. peak hour trips in and out of the project are the inverse of the weekday p.m. peak hour trips for each land use.

TABLE 3.B-15
PROJECT VEHICLE AND TRANSIT TRIP DISTRIBUTION

Origin/Destination	Developer's Proposed Option and Additional Housing Option	
	Vehicle Trip Distribution	Transit Trip Distribution
Downtown/North Beach	11%	41%
South of Market (SoMa)	2%	8%
Marina/Western Market	12%	7%
Mission/Potrero	10%	5%
Outer Mission/Hills	14%	10%
Bayshore	4%	3%
Richmond	1%	10%
Sunset	24%	3%
Islands	0%	0%
South Bay	16%	4%
East Bay	6%	9%
North Bay	0%	0%
Total	**100%**	**100%**

SOURCE: SF Guidelines, 2019.



Source: Kittelson & Associates, Inc., 2019

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Figure 3.B-5
Project Vehicle and Transit Trip Distribution

Step 4. Assignment

Assignment refers to the location or assignment of project vehicle trips to different streets, on-street loading zones, and driveways, and project transit trips to specific transit routes. In other words, assignment uses the results of step 2, number of project trips by different ways of travel, and step 3, percentages of those projects trips to and from common destinations, to place assign project-generated vehicle and transit trips to the local streets and transit routes in the study area. **Figure 3.B-6a, Project Vehicle Trip Assignment – Developer's Proposed Option**, and **Figure 3.B-6b, Project Vehicle Trip Assignment – Developer's Proposed Option**, presents a.m. and p.m. peak period project vehicle trips to the intersections and driveways in the study area for the Developer's Proposed Option. Under the Developer's Proposed Option, the existing vehicle trips destined for the parking lot on the project site were redistributed from the north entrance along Frida Kahlo Way to Ocean Avenue/Lee Avenue to access the proposed public parking garage located on the southern end of the project site. **Figure 3.B-7a, Project Vehicle Trip Assignment – Additional Housing Option**, and **Figure 3.B-7b, Project Vehicle Trip Assignment – Additional Housing Option**, presents a.m. and p.m. peak period project vehicle trips to the intersections and driveways in the study area for the Additional Housing Option.

Loading Demand

Loading demand consists of the estimated number of project delivery/service vehicle and passenger vehicle trips. Loading demand rates, accounting for the size and type of land uses were applied to estimate the freight and passenger loading demand. **Table 3.B-16, Freight and Passenger Loading Demand by Land Use**, presents daily, average, and peak hour demand for delivery/service vehicles and peak hour for passenger vehicles.

Construction Impacts

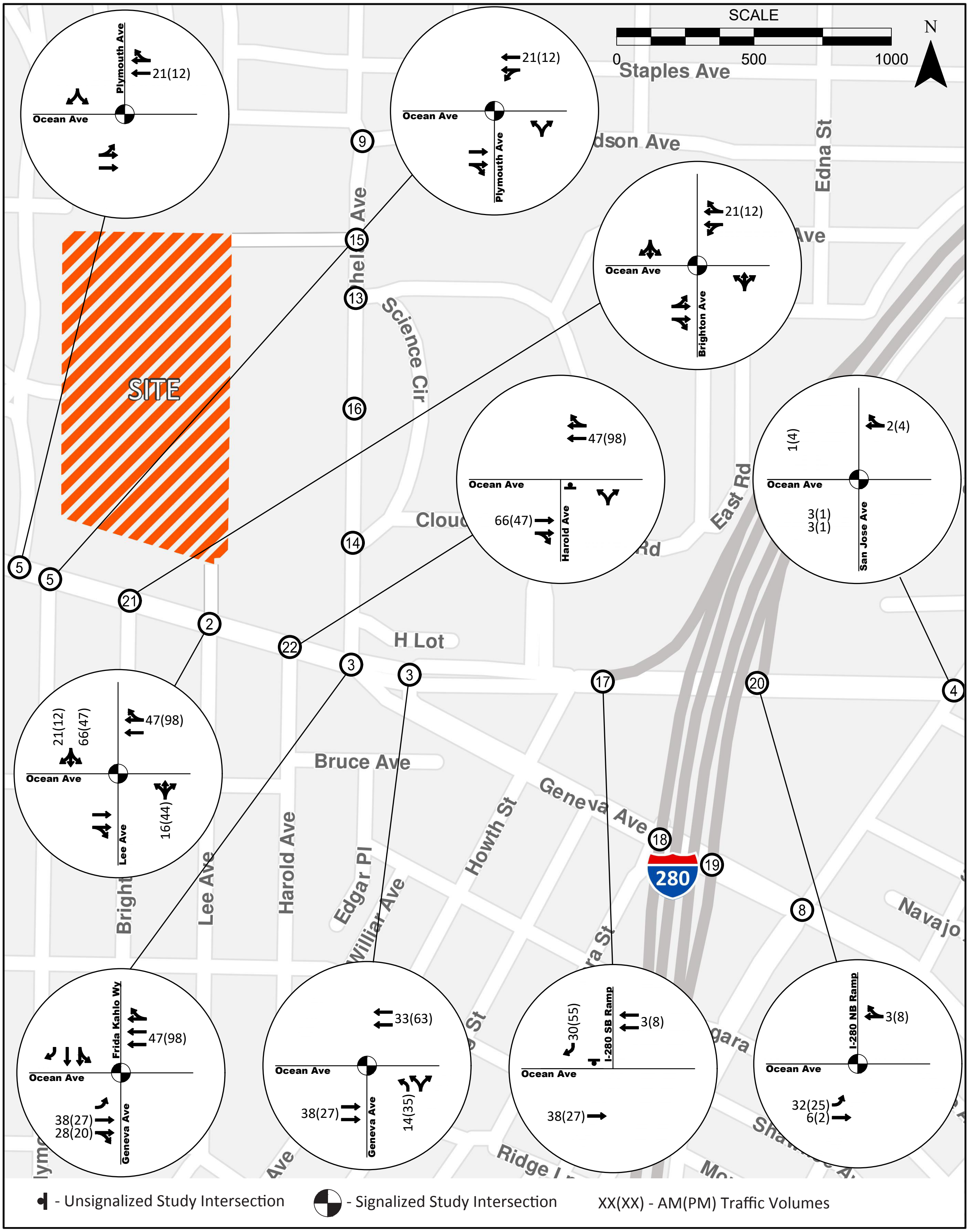
The analysis for addressing project construction impacts uses preliminary project construction information. The evaluation addresses the staging and duration of construction activities, estimated daily worker and truck trips, truck routes, roadway and/or sidewalk closures, and evaluates the effects of construction activities on people walking, bicycling, or driving, and riding public transit and emergency vehicle access.

Operational Impacts

The following describes the methodology for analysis of operational impacts, by significance criterion.

Potentially Hazardous Conditions

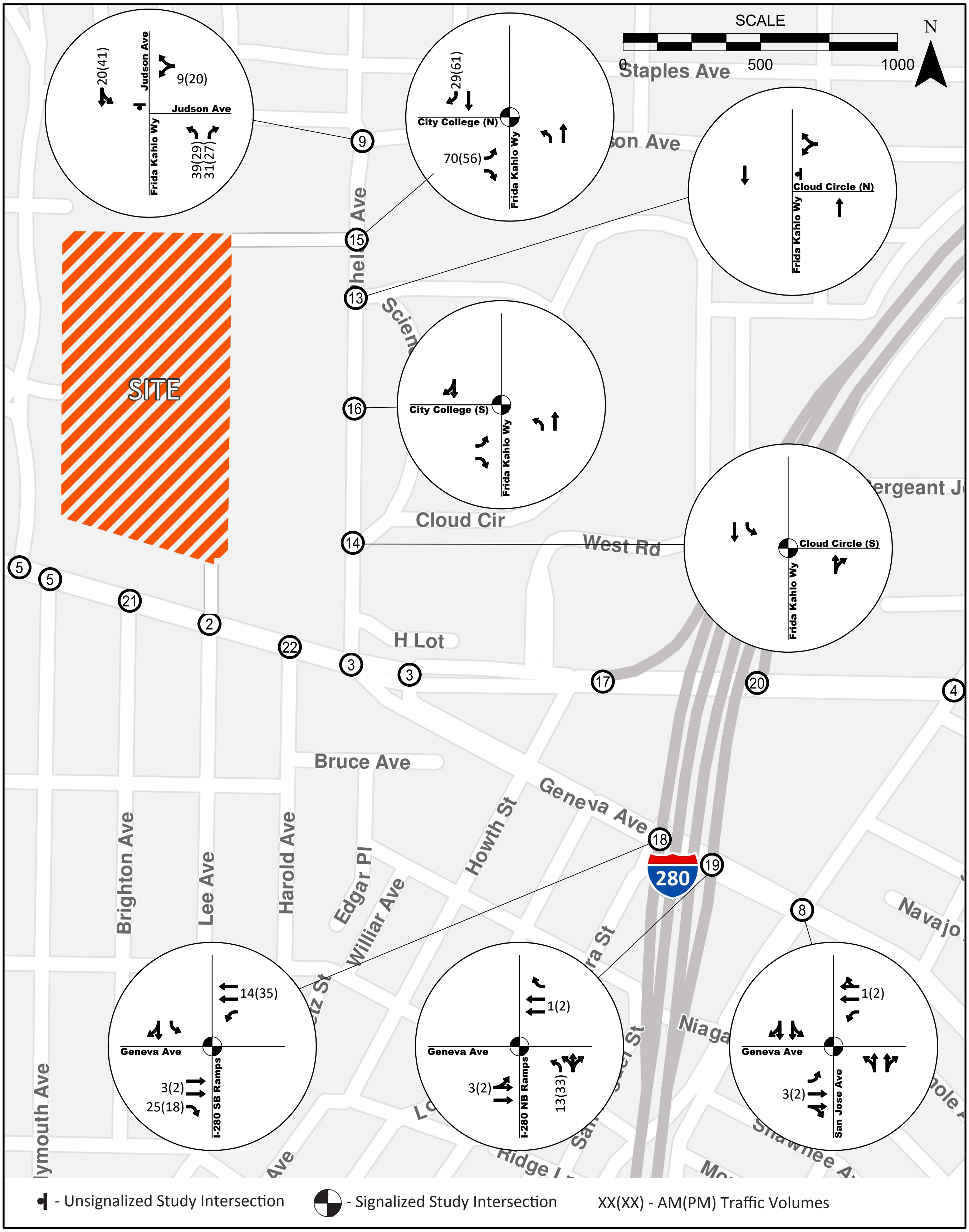
A "hazard" refers to a project generated vehicle potentially colliding with a person walking, bicycling, or driving or public transit vehicle that could cause serious or fatal physical injury, accounting for the aspects described below. Human error or noncompliance with laws, weather conditions, time-of-day, and other factors can affect whether a collision could occur. However, for purposes of CEQA, hazards refer to engineering aspects of a project (e.g., speed, turning movements, complex designs, substantial distance between street crossings, sight lines) that may cause a greater risk of collisions that result in serious or fatal physical injury than a typical project. This analysis focuses on hazards that could reasonably stem from the project itself, beyond collisions that may result from aforementioned non-engineering aspects or the transportation system as a whole.



SOURCE: Kittelson & Associates, Inc., 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

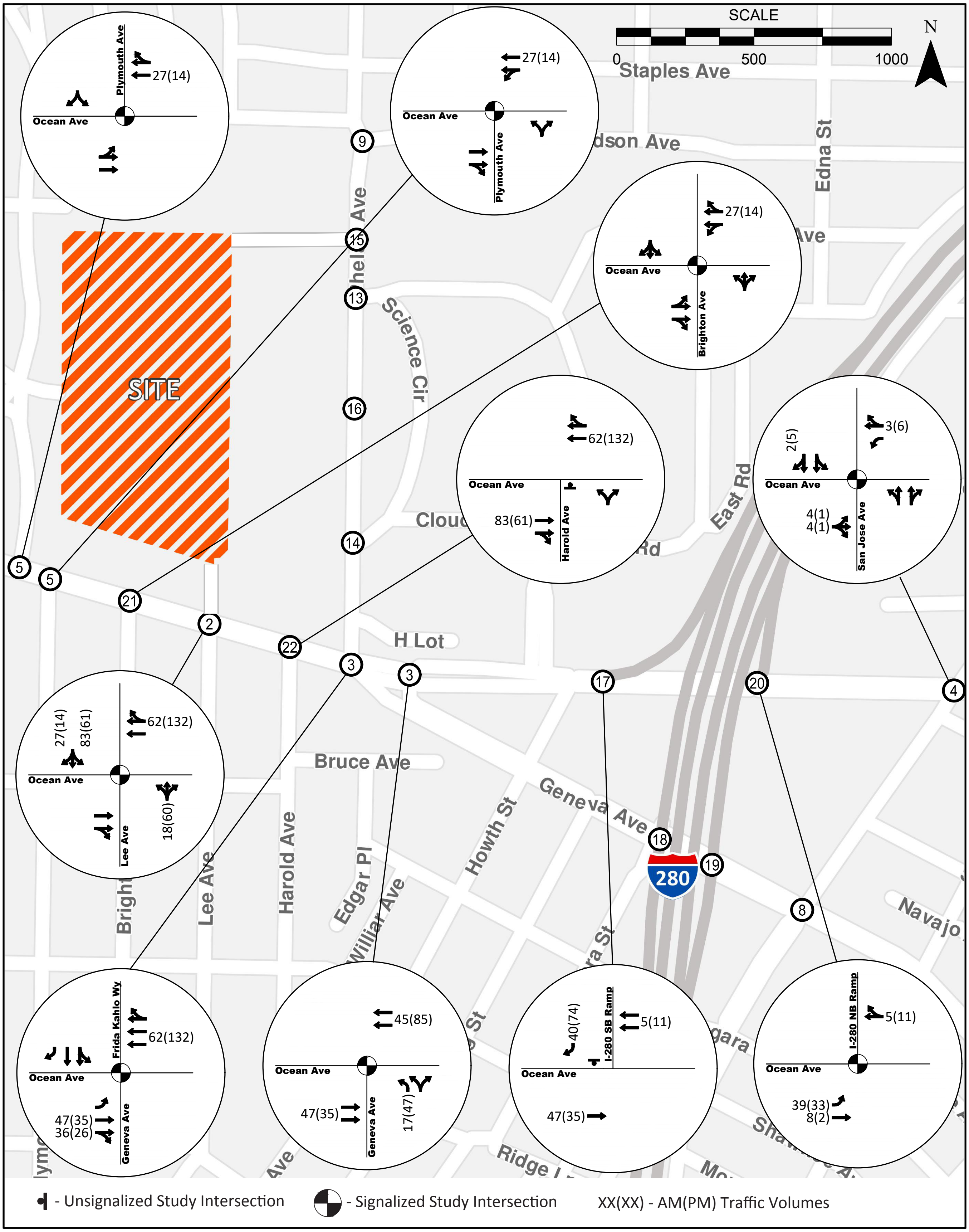
Figure 3.B-6a
Project Vehicle Trip Assignment - Developer's Proposed Option



SOURCE: Kittelson & Associates, Inc., 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

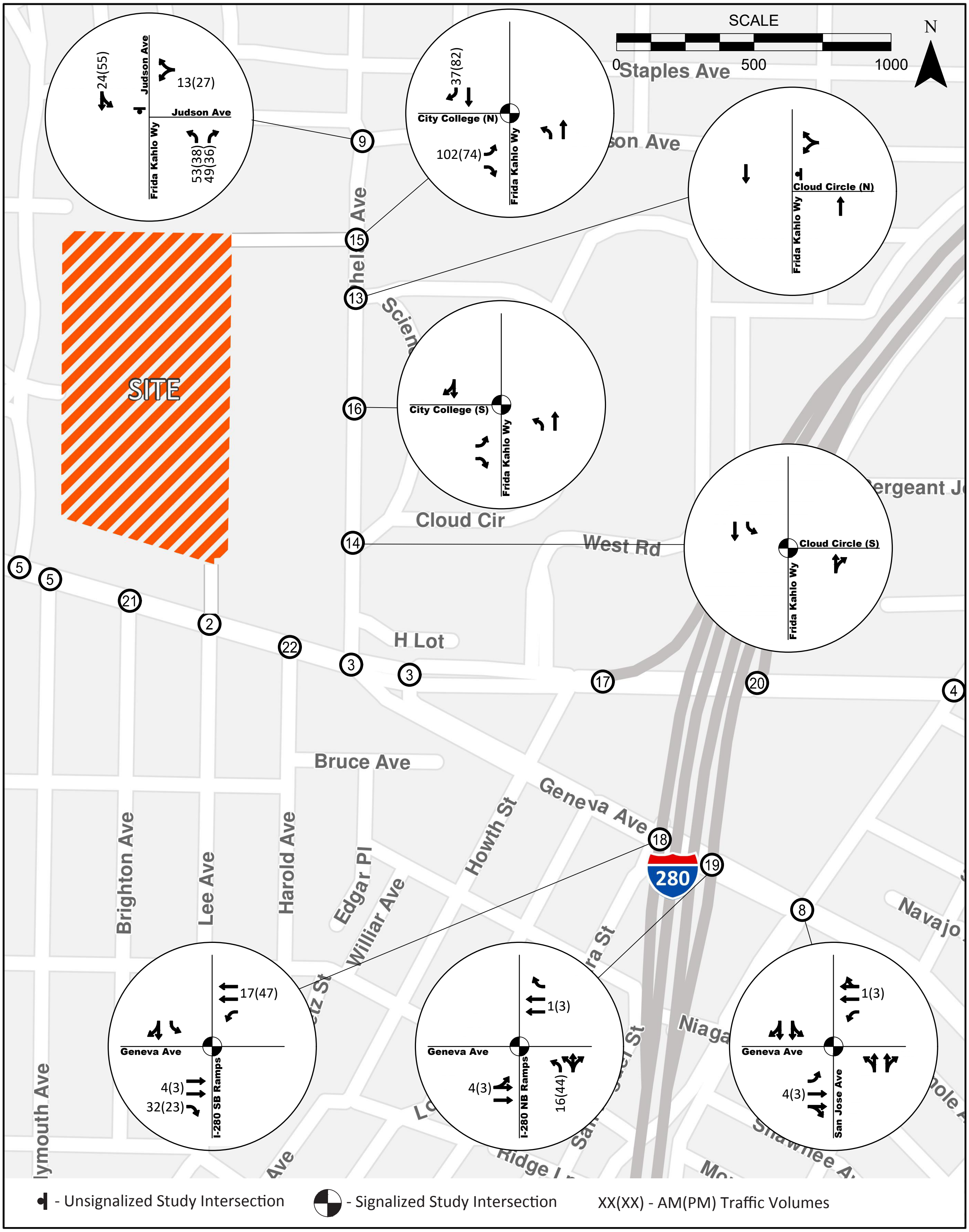
Figure 3.B-6b
Project Vehicle Trip Assignment - Developer's Proposed Option



SOURCE: Kittelson & Associates, Inc., 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 3.B-7a
Project Vehicle Trip Assignment - Additional Housing Option



SOURCE: Kittelson & Associates, Inc., 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 3.B-7b
Project Vehicle Trip Assignment - Additional Housing Option

TABLE 3.B-16
FREIGHT AND PASSENGER LOADING DEMAND BY LAND USE AND OVERALL

Land Use	Demand by Land Use				Overall Demand (rounded up to building)[c]		
	Freight Loading Demand (spaces)[a]			Peak Hour Passenger Loading Demand (spaces, rounded)[b]	Freight Loading Demand (spaces)		Peak Hour Passenger Loading Demand (spaces, rounded)
	Daily	Average Hour	Peak Hour		Average Hour	Peak Hour	
Developer's Proposed Option							
Residential	38.5	1.8	2.2	2	10	10	10
Retail	1.7	0.1	0.1	1			
Daycare	1.0	0.0	0.1	1			
Total	**41.1**	**1.9**	**2.4**	**4**	**10**	**10**	**10**
Additional Housing Option							
Residential	46.4	2.1	2.7	2	12	12	12
Retail	1.7	0.1	0.1	1			
Daycare	1.0	0.0	0.1	1			
Total	**49.1**	**2.2**	**2.9**	**4**	**12**	**12**	**12**

SOURCE: SF Guidelines, 2002; SF Guidelines, 2019

NOTES:

a Freight loading demand is presented as the number of delivery/service vehicle trips per time period. The peak period of freight loading demand typically occurs between 10 a.m. and 1 p.m. and does not coincide with the weekday a.m. and p.m. peak periods.

b Passenger loading demand is presented as the passenger loading trips estimated to occur during the peak period. The peak period of demand occurs during the extended weekday p.m. peak period (3 to 7 p.m.).

c Freight and passenger loading demand at each individual building would be less than one space during the average and peak hours of activity and would round up to one space. Therefore, the overall demand would be rounded up to one freight and one passenger loading space per building.

Therefore, the methodology qualitatively addresses the potential for the project to exacerbate an existing or create a new potentially hazardous condition to people walking, bicycling, or driving, or public transit operations. The methodology accounts for the amount, movement type, sightlines, and speed of project vehicle trips and project changes to the public right-of-way in relation to the presence of people walking, bicycling, or driving. Additionally, an evaluation of vehicle volumes and 95th percentile queues[95] at the Ocean Avenue/Lee Avenue intersection was conducted to assess the potential of the project to create hazardous conditions for people walking, bicycling, driving, or public transit operations.

Accessibility

The methodology qualitatively addresses the potential for the project to interfere with the accessibility of people walking or bicycling or results in inadequate emergency access. The methodology accounts for the amount, movement type, sightlines, and speed of project vehicle trips and project changes to the public right-of-way in relation to the presence of people walking and bicycling or emergency service operator facilities.

[95] The 95th percentile queue is the queue length (in vehicles) that has only a 5 percent probability of being exceeded during the analysis time period (i.e., for this analysis, a total period of 60 minutes).

Public Transit Delay

The department uses a quantitative threshold of significance and qualitative criteria to determine whether the project would substantially delay public transit. For individual Muni routes, if the project would result in transit delay greater than equal to four minutes, then it might result in a significant impact.[96] 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 modes, and competitiveness with private vehicles.

The methodology assesses and reports a.m. and p.m. peak hour transit delay for Muni routes operating along Frida Kahlo Way (43 Masonic), Ocean Avenue (K Ingleside, 29 Sunset, and 49 Van Ness/Mission), and Geneva Avenue (8 Bayshore, 8BX 8 Bayshore 'B' Express, 43 Masonic, and 54 Felton) using the following three factors:

- **Traffic congestion delay**—When public transit vehicles share travel lanes with private vehicles or private vehicles block intersections or result in longer traffic signal phases to accommodate their movements, transit vehicles slow down. The methodology uses Trafficware's Synchro modeling software to calculate traffic congestion delays along corridors served by transit.
- **Transit reentry delay**—Public transit vehicles may experience delays after stopping to pick up and drop off passengers. This delay occurs if the transit vehicles must pull over to another travel lane and they need to wait for gaps in adjacent street traffic to pull out of stops. As traffic volumes on streets increase, transit vehicles experience increased delays as it becomes more challenging for them to reenter the flow of traffic. The methodology uses empirical data from the 2000 Highway Capacity Manual to calculate transit reentry delay caused by the project by summing the transit reentry delay at each stop within the study area, depending on the adjacent lane traffic volumes.
- **Passenger boarding delay**—The amount of time a transit vehicle spends picking up and dropping off passengers (i.e., the transit vehicle dwell time) is correlated to the number of passengers boarding the vehicle. As general transit ridership grows, vehicles spend more time at stops, which increases transit travel times. The methodology uses empirical data to calculate passenger boarding delay caused by the project by multiplying the total number of project transit trips on each route by two seconds of delay.

VMT Analysis Methodology

Land Use Components

The planning 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;

[96] The threshold uses the adopted the Transit First Policy, City Charter section 8A.103 85, percent on-time performance service standard for Muni, with the charter considering vehicles arriving more than four minutes beyond a published schedule time late.

- For office projects, if it exceeds the regional VMT per employee minus 15 percent;
- For retail projects, if it exceeds the regional VMT per retail employee minus 15 percent;[97] and
- For mixed-use projects, evaluate each land use independently, per the thresholds of significance described above.

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. SFCTA uses a travel demand 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 aforementioned VMT quantitative threshold of significance. Childcare is treated as office for screening and analysis.[98]

Further, 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.[99]

Transportation Components

The proposed project is a mixed-use development project that includes the creation of an internal street network, facilities for people walking and biking, traffic calming measures, and intersection traffic control devices including stop controls.

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.

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

[97] Retail travel is not explicitly captured in San Francisco chained activity modeling process, rather, there is a generic "Other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other nonwork, 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; school enrollment, and number of households) represents the size, or attraction, of the zone for this type of "Other" purpose travel.

[98] San Francisco Planning Department, *Transportation Impact Analysis Guidelines*, Vehicle Miles Traveled (VMT) Memo Appendix A, Attachment A, p. 5.

[99] 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.

combinations of types) listed below, then the department presumes that VMT impacts would be less than significant:

- Active Transportation, Rightsizing, and Transit Projects:
  - Infrastructure projects, including safety and accessibility improvements for people walking or bicycling
  - Installation or reconfiguration of traffic calming devices
  - Creation of new or addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for people walking, bicycling, and, if applicable, riding transit
- Other Minor Transportation Projects:
  - 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
  - Timing of signals to optimize vehicle, bicycle or pedestrian flow on local or collector streets
  - Addition of transportation wayfinding signage
  - Removal of off-street parking spaces

Loading

The loading analysis considers loading conditions within the project site and along Lee Avenue between Ocean Avenue and the project site.

Within the Project Site

The methodology assesses the potential for convenient off- and on-street freight and passenger loading facilities to meet the project's loading demand during the average peak period. For the purposes of this section, convenient refers to facilities located wholly within the project site.

If convenient loading facilities meet the estimated demand, the analysis is complete. If convenient loading facilities do not meet the demand, then the methodology qualitatively addresses the potential for the project to exacerbate an existing or create a new potentially hazardous condition to people walking, bicycling, or driving or substantially delay public transit.

Lee Avenue between Ocean Avenue and the Project Site

The methodology assesses the potential for the project to result in changes to the existing supply of off- and on-street freight and loading facilities such that it would impact existing loading activity (primarily related to the Whole Foods grocery store) along Lee Avenue between Ocean Avenue and the project site.

If convenient loading facilities meet the existing demand, the analysis is complete. If convenient loading facilities do not meet the existing demand, then the methodology qualitatively addresses the potential for the project to exacerbate an existing or create a new potentially hazardous condition to people walking, bicycling, or driving or substantially delay public transit.

2040 Cumulative Conditions

The 2040 cumulative conditions assess the long-term impacts of the project in combination with cumulative projects. The following summarizes future year modeling and cumulative projects list relevant to particular transportation topics. In addition, the following summarizes differences between existing plus project and these future year conditions regarding the methodology for analyzing and any quantitative thresholds of significance for determining transportation impacts.

2040 Modeling

The cumulative conditions analysis incorporates data and forecasts from the SF-CHAMP outputs in the analysis of VMT impacts. The model is an activity-based travel demand model that the transportation authority calibrates to represent future transportation conditions in San Francisco, accounting for assumptions regarding cumulative infrastructure projects and population growth. Inputs to the model include:

- Infrastructure projects listed in Plan Bay Area (2017);
- Infrastructure projects listed in San Francisco's Countywide Transportation Plan, Capital Plan, or a San Francisco agency's (e.g., SFMTA) Capital Improvement Program and anticipated for completion between 2020 and 2040;
- Infrastructure, private development, or area plan projects actively undergoing environmental review, recently completed environmental review, or the department anticipates to undertake environmental review in the near future because they have received sufficient project definition; or
- Land use growth assumptions derived from the Jobs-Housing-Connections projections developed by ABAG/MTC.[100]

2040 Cumulative Projects

The cumulative conditions analysis for transportation topics other than VMT uses a list-based approach. The project site is located within the boundaries of the area plan and there are multiple active development and transportation projects in the vicinity of the project site in various stages of planning, design, or construction. The geographic context for the analysis of cumulative transportation impacts generally includes the sidewalks and roadways adjacent to the project site, and the local roadway and transit network within 0.5 mile of the project site. 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 cumulative projects. The following describes cumulative land development and transportation projects that the analysis uses to assess cumulative impacts.

Development

The PEIR estimated that implementation of the area plan would result in a net increase of 1,780 residential units (including 500 residential units on the Balboa Reservoir site) and 104,620 net

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[100] The analysis used the Better Market Street Model Run. Documentation, including input assumptions, is included in the Transportation Impact Analysis Guidelines – Supplementary Guidance Memorandum on pp. 16-21. *http://default.sfplanning.org/publications_reports/TIA_Guidelines_Supplementary_Guidance_Memo.pdf*, accessed April 16, 2019.

new square feet of commercial development in the plan area by 2025. As of May 2019, 273 dwelling units and 40,904 square feet of commercial uses had been built in the plan area. Excluding the proposed project, an additional 209 dwelling units and 10,995 square feet of commercial uses are under construction in the plan area (SEIR Section 3.A, Impact Overview, p. 3.A-1).

The list of reasonably foreseeable cumulative development projects generally located within the plan area or 0.5 mile of the project site that are considered in the transportation analysis are presented in Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11, and illustrated on Figure 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-12, in Section 3.A.6, Approach to Cumulative Impact Analysis.

The Developer's Proposed Option, in combination with completed projects and cumulative development projects, would represent a net increase of 1,582 residential units and 59,339 square feet of commercial development. This is 198 fewer residential units and 45,281 fewer square feet of commercial space than what was assumed in the PEIR.

The Additional Housing Option, in combination with completed projects and cumulative projects, would represent a net increase of 2,032 residential units and 59,339 square feet of commercial development. This is 252 more residential units and 45,281 fewer square feet of commercial space than what was assumed in the PEIR.

In addition to the development projects identified in this section, City College of San Francisco Board of Trustees adopted its facilities master plan in March 2019.[101] In April 2019, the City College Board of Trustees authorized a contract to conduct CEQA compliance services for the master plan.[102] City College staff presented a facilities planning update at the May 30, 2019 Board of Trustees meeting on a potential bond measure that would be anticipated to fund construction of the facilities master plan projects. At the time of this Balboa Reservoir SEIR preparation, project-specific information for the Ocean Campus projects envisioned as part of the facilities master plan is not available.

As part of the planning process, City College may change the projects identified in the facilities master plan, or their details, depending on funding availability; furthermore, City College has not conducted CEQA analysis for those projects. Such projects may be further refined as part of the environmental review process. As result, it is speculative to quantitatively evaluate the cumulative impacts of the Ocean Campus based on the available information. Therefore, the cumulative analysis for this SEIR will qualitatively assess the impacts of these Ocean Campus projects identified in Table 3.A-2, City College Ocean Campus Projects, p. 3.A-13, collectively as the "Facilities Master Plan" using best available information at the time of this SEIR preparation.

[101] City College of San Francisco, *Agenda Item 11F, Facilities Master Plan (FMP) Approval*, March 21, 2019, *http://go.boarddocs.com/ca/ccsf/Board.nsf/goto?open&id=B7C2MM80CD17*, accessed June 7, 2019.

[102] City College of San Francisco, *Agenda Item 10H, Authorization to execute a contract with Impact Sciences to provide California Environmental Quality Act (CEQA) Compliance Services to the District from May 1, 2019 through December 31, 2020*, April 25, 2019, *http://go.boarddocs.com/ca/ccsf/Board.nsf/goto?open&id=BAX6YJ7208A5*, accessed June 7, 2019.

Transportation

The cumulative conditions analysis also considers the effects of foreseeable changes to the transportation network. Some of the changes identified in the area plan have been implemented, including removal of two travel lanes and installation of class II bike lanes on Frida Kahlo Way. Key projects affecting the transportation network that were assumed to be in place as part of the 2040 cumulative conditions include the following:

- **Ocean Avenue Safety Project.**[103] The Ocean Avenue Safety Project is aimed at improving safety, accessibility, and comfort for people traveling on Ocean Avenue between Geneva Avenue/Frida Kahlo Way and San Jose Avenue. The project will develop a set of near-term improvements and a long-term vision for the corridor. Near-term projects are anticipated to be under construction in 2020.
- **I-280 Interchange Modifications at Balboa Park Project.**[104] The recommended alternative would create a partial split interchange in which northbound I-280 traffic would exit onto Geneva Avenue but enter the freeway from Ocean Avenue; southbound traffic would still be able to exit both Geneva and Ocean avenues while only entering from Geneva Avenue. The project is anticipated to be completed by 2024. The recommended modifications included three project elements:
  - Element 1: Close the northbound I-280/Geneva Avenue on-ramp
  - Element 2: Realign the southbound I-280/Ocean Avenue off-ramp into a "T" intersection with a new signal on Ocean Avenue
  - Element 3: Construct a new northbound frontage road between Geneva Avenue and Ocean Avenue, immediately east of I-280, to accommodate a new kiss-and-ride drop off area with direct connection to the BART Westside Walkway
- **Van Ness Improvement Project.**[105] This project will build red center-running bus rapid transit lanes, station platforms, and new medians along Van Ness Avenue. Bus Rapid Transit service is expected to begin in 2021 and would cut overall travel times on the 49 Van Ness/Mission.
- **Muni Forward Project.** The Muni Forward project provided a thorough review of San Francisco's public transit system by SFMTA. Based on this review, the SFMTA developed Muni Forward proposals aimed at improving reliability, reducing travel times, providing service that is more frequent, and updating Muni bus routes and rail lines to better match travel patterns. Muni Forward projects are being implemented based on funding and resource availability. Muni Forward recommendations included new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The proposed changes to Muni routes serving the project site include:
  - **8 Bayshore Transit Priority Treatments.** This project is being implemented in phases as part of the San Bruno Avenue Multimodal Improvement Project and the Geneva Avenue & Visitacion Valley Multimodal Improvement Project. Changes under the former have already been approved, but are yet to be implemented (currently under construction). Preliminary transit priority treatments have been developed for the route segments along

103 SFMTA, Ocean Avenue Safety Project website, *https://www.sfmta.com/projects/ocean-avenue-safety-project*, accessed January 10, 2019.

104 SFCTA, I-280 Interchange Modifications at Balboa Park Project website, *https://www.sfcta.org/I-280-interchange-modifications-balboa-park-project*, accessed January 10, 2019.

105 SFMTA, Van Ness Improvement Project website, *https://www.sfmta.com/projects/van-ness-improvement-project*, accessed January 10, 2019.

Geneva Avenue and through Visitacion Valley, but are currently being reevaluated by SFMTA through additional outreach.[106,107,108]

- **28 19th Avenue Rapid Project.**[109] Expanded service operating on weekdays from 7 a.m. to 7 p.m. with 10-minute headways has been implemented. The project includes transit and pedestrian bulbs at 20 intersections, stop relocations and removals at eight intersections, and a bus zone extension.
- **54 Felton.** Reroute through the Excelsior District onto Moscow Street in the inbound direction expected to be implemented summer 2019.
- **Two-Car Trains on K and T Line.** Starting with the completion of Twin Peaks tunnel work, the entire K/T line will be upgraded to two-car trains. For the Ocean Avenue section of the line, some boarding facilities currently do not extend the full length of a one-car or two-car train. Therefore, only the front trains along Ocean Avenue will be in service.

In addition to the above listed projects, the cumulative conditions analysis also incorporates the effects of several other major projects that are citywide or regional in scope, even though they would not directly affect the transportation network in the vicinity of the project site. Projects such as Geary Corridor Bus Rapid Transit, the Caltrain Modernization Program, expanded ferry service from WETA, and various capacity upgrades to BART—including the Train Control Modernization Program and new Fleet of the Future rolling stock—will affect transit service (and capacity), and have been accounted for in the latest SF-CHAMP model runs.

Construction Impacts

The analysis for addressing project construction impacts uses preliminary project construction information from the following reasonably foreseeable projects: City College facilities master plan, Ocean Avenue Safety Project and I-280 Interchange Modifications at Balboa Park Project.[110] The evaluation uses the same methodology as described above for existing plus project conditions.

Cumulative Operational Impacts

The following describes the methodology for cumulative analysis of operational impacts, by significance criterion. If the combined projects would result in a significant cumulative impact, the 2040 cumulative conditions assess the project's contribution to that impact.

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106 San Francisco Planning Department, Balboa Park Station Area Project Status Map, *https://www.google.com/maps/d/u/0/viewer?mid=1SmS264e6XZmloZxbCFRwdH_5mX4&ll=37.72365776834927%2C-122.4523862281078&z=18*, accessed January 10, 2019.

107 SFMTA, Geneva Avenue Multimodal Improvement Project website, *https://www.sfmta.com/projects-planning/projects/geneva-ave-visitacion-valley-multimodal-improvement-project*, accessed January 10, 2019.

108 SFMTA, San Bruno Avenue Multimodal Improvement Project website, *https://www.sfmta.com/projects/san-bruno-ave-multimodal-improvement-project*, accessed January 10, 2019.

109 SFMTA, 28 19th Avenue Rapid Project website, *https://www.sfmta.com/projects/28-19th-avenue-rapid-project*, accessed January 10, 2019.

110 SFCTA, I-280 Interchange Modifications at Balboa Park Project website, *https://archive.sfcta.org/I-280-interchange-modifications-balboa-park-project*, accessed January 10, 2019.

110 City College identified the Performing Arts Center and East Basin Parking Lot as reasonably foreseeable projects that could overlap with the proposed project's construction timeframe. Both City College projects are anticipated to be under construction for 24 months from 2021 to 2023 and operational by 2023.

Potentially Hazardous Conditions

The analysis for addressing potentially hazardous conditions uses information from the PEIR and a subset of cumulative projects identified in SEIR Section 3.A, Impact Overview, p. 3.A-1, including the City College Facilities Master Plan. The evaluation uses the same methodology as described above for existing plus project conditions.

Accessibility

The analysis for addressing interference or inadequate access uses information from the PEIR and a subset of cumulative projects identified in SEIR Section 3.A, Impact Overview, p. 3.A-1, including the City College Facilities Master Plan. The evaluation uses the same methodology as described above for existing plus project conditions.

Public Transit Delay

The analysis for addressing public transit delay uses information from the PEIR and a subset of cumulative projects identified in SEIR Section 3.A, Impact Overview, p. 3.A-1, including:

- 2340 San Jose Avenue (Upper Yard)
- 2301 San Jose Avenue (Geneva Office Building – Geneva Car Barn and Powerhouse)
- 1601-1631 Ocean Avenue and 1271 Capitol Avenue
- 350 Ocean Avenue
- City College Facilities Master Plan
- Ocean Avenue Safety Project
- I-280 Interchange Modifications at Balboa Park Project

The evaluation uses the same methodology and qualitative criteria as described above for existing plus project conditions.

VMT Analysis

VMT by its nature is largely a cumulative impact. The number and distance of vehicular trips associated with past, present, and future projects might contribute to the secondary physical environmental impacts associated with VMT. It is likely that no single project by itself would be sufficient in size to prevent the region or state in meeting its VMT reduction goals. Instead, a project's individual VMT contributes to cumulative VMT impacts. The department uses existing plus project-level thresholds of significance based on levels at which the department does not anticipate new projects to conflict with state and regional long-term greenhouse gas emission reduction targets and statewide VMT per capita reduction targets.

Therefore, the department assesses whether the region is estimated to meet its long-term greenhouse gas emission reduction targets to determine if a cumulative impact would occur. If a cumulative impact would occur, the department uses a map-based screening criterion to identify types and locations of land use projects that would not exceed the same quantitative thresholds of significance described under existing plus project conditions. The analysis uses the 2040 modeling of VMT estimates to present VMT for residential, office, and retail in San Francisco and the region. The department uses that data and associated maps to determine whether a project site's location is below the aforementioned VMT quantitative threshold of significance, including for the other land use types described above. Childcare is treated as office use for purposes of screening and analysis.

Loading

The analysis for addressing loading uses information from the City College facilities master plan. The evaluation uses the same methodology as described above for existing plus project conditions.

Impact Evaluation

Existing plus Project

Impact TR-1: Construction of the project would not require a substantially extended duration or intense activity and the secondary effects would not create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling; or substantially delay public transit. (Less than Significant)

The discussion of construction impacts is based on currently available information from the project sponsor, as summarized in SEIR Section 2.G, Project Construction Overview and Schedule, p. 2-38. The construction information has been developed by the sponsor and their contractor for the purpose of environmental review, but is subject to change once construction-level plans are available and the construction logistics are reviewed by City agencies, as required. Prior to construction, as part of the building permit process, the project sponsor and construction contractor(s) would be required to meet with San Francisco Public Works and SFMTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles. The construction contractor would be required to meet the City of San Francisco's Regulations for Working in San Francisco Streets, (the blue book), including those regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required.[111] In addition to the regulations in the blue book, the contractor would be responsible for complying with all city, state and federal codes, rules and regulations. The project sponsor would be responsible for reimbursing the SFMTA for any temporary striping and signage during project construction.

The proposed project is anticipated to be constructed in three phases over the course of six years. The three development phases are Phase 0 (grading and site infrastructure, one year), Phase 1 (townhomes and inner blocks, 2.5 years), and Phase 2 (Blocks A, B, G, and H, 2.5 years). No parking lane or sidewalk closures would be required during construction and access to Muni bus stops would be maintained during all phases of construction.

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111 San Francisco Municipal Transportation Agency, *Regulations for Working in San Francisco Streets*, 8th Edition, January 2012, *https://www.sfmta.com/sites/default/files/reports-and-documents/2017/10/blue_book_8th_edition_pdf.pdf*, accessed January 10, 2019.

Construction activities would generally be conducted between 7 a.m. and 8 p.m. daily, consistent with San Francisco Police Code section 2908.[112] Outside of those hours, nighttime construction activities, particularly related to noise, would be subject to a special permit as described in Police Code article 29.

Table 3.B-17, Construction Activity by Phase, presents the anticipated duration for each of the three major phases of construction, and the average and maximum numbers of daily construction truck trips and workers.

TABLE 3.B-17
CONSTRUCTION ACTIVITY BY PHASE

Construction Phase[a]	Duration	Daily Construction Workers (Average/Maximum)		Daily Truck Trips (Average/Maximum)	
		Developer's Proposed Option	Additional Housing Option	Developer's Proposed Option	Additional Housing Option
0 – Grading, Infrastructure	1 year	33/40	33/40	0/0[b]	0/0[b]
1 – Townhome, Inner Blocks[c]	2.5 years	330/350	415/460	170/180	220/240
2 – Blocks A, B, G, H	2.5 years	260/290	385/420	140/240	200/320

SOURCE: Reservoir Community Partners, LLC, 2018, ESA, 2019.

NOTES:

a Phase 1 Townhome and Inner Blocks would be occupied following construction. Construction of Phase 2 Blocks A, B, G, and H would overlap with occupancy of Phase 1.

b The grading plan intends to balance the site and use as much cut soil as fill soil in other areas of the site, minimizing or eliminating the need for either soil import or export. Truck trips are not required during Phase 0 because graders, excavators, and dozers would be used to remove and redeposit soil on the project site. Export of soil would occur during Phase 2.

c The Additional Housing Option includes Blocks I and J with the townhomes in Phase 1.

Under both project options, the proposed project would minimize the need for exporting materials by recycling and reusing excavated materials (concrete, asphalt, and soils) on-site during Phase 0. The number of construction-related truck trips would range from 0 to 320 daily round-trips for material delivery and removal depending on the construction phase and project option. The maximum number of daily truck trips (240 daily construction-truck trips under the Developer's Proposed Option and 320 construction-related truck trips under the Additional Housing Option) would occur during Phase 2.

As described in Section 2.G, Project Construction Overview and Schedule, p. 2-38, depending on market conditions and other unanticipated factors the project may be constructed over a shorter timeframe and Phases 1 and 2 may occur concurrently instead of sequentially. Such phasing may result in full project construction over three years instead of six years. If this were to occur, the same amount of construction equipment and hours of operation would be required, but the activity would be compressed into a shorter duration. Under the accelerated schedule, the average number of construction-related truck trips would range from 310 to 420 daily round-trips for material delivery and removal depending on the construction phase and project option. The maximum

112 San Francisco Department of Building Inspection, Frequently Asked Questions, November 2014, http://sfdbi.org/frequently-asked-questions, accessed June 12, 2018.

number of daily truck trips would be 420 daily construction-truck trips under the Developer's Proposed Option and 560 construction-related truck trips under the Additional Housing Option.

Throughout the construction period there would be a flow of construction-related traffic into and out of the site that would be required to use designated freight traffic route. The primary haul routes for construction truck traffic would be:[113]

- Entering the site: I-280 and Ocean Avenue westbound, continue northbound on Frida Kahlo Way to access the site at North Access Road
- Exiting the site: Turn right onto Frida Kahlo Way at Cloud Circle (S), continue southbound on Frida Kahlo Way and turn left onto Ocean Avenue eastbound

These truck routes are consistent with freight traffic routes identified in the general plan and designated street restrictions.[114,115] Truck routes would be reviewed with the SFMTA as part of the permit process prior to construction. The impact of construction truck traffic would be a temporary lessening of the capacities on surrounding roadways and truck routes (as well as connecting local streets) due to the slower movement and larger turning radii of trucks. Construction truck traffic could result in minor congestion and conflicts with traffic, transit, bicycle, and pedestrian circulation. However, potential impacts would be considered less than significant due to their phased duration. Some construction activity would overlap with the City College class schedule and would coincide with the arrival/departure of students, faculty, and staff. Traffic volumes were observed to be lower during the weekday mid-morning and afternoon periods, during typical student, faculty, and staff arrivals/departure periods, than the peak a.m. and p.m. periods. The project sponsor would be required to develop a construction management plan in accordance with the blue book regulations addressing transportation-related circulation, access, staging and hours of delivery. The construction management plan would be developed to minimize overall disruption and ensure that overall circulation in the project area is maintained to the extent possible, with particular focus on minimizing interference with transit, pedestrian, and bicycle connectivity. While there may be some occasional disruption to circulation as a result of on-road construction vehicles or construction-related truck traffic, these effects would not be frequent or substantial enough to constitute a significant impact.

The number of construction workers accessing the site would range from 33 workers per day (the anticipated average during Phase 0 under both project options) to 460 workers per day (the anticipated maximum during Phase 1 under Additional Housing Option). The maximum number of construction workers per day (350 under the Developer's Proposed Option and 460 under the Additional Housing Option) would occur during Phase 1. On-site parking would be provided for construction worker vehicles throughout the construction period. During Phase 0 parking would be provided throughout the site. During Phase 1, parking would be provided in the central park area and Phase 2 construction areas. During Phase 2, limited parking would be provided in the SFPUC open space.

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113 Construction truck haul route map provided by Reservoir Community Partners LLC, dated July 6, 2018.
114 San Francisco Planning Department, General Plan Freight Traffic Routes, *https://www.sf-planning.org/ftp/General_Plan/images/I4.transportation/tra_map15.pdf*, accessed February 11, 2019.
115 SFMTA, San Francisco Street Restrictions Effective December 2017, *https://www.sfmta.com/sites/default/files/pdf_map/2017/12/streetrestrictions.pdf*, accessed February 11, 2019.

The number of construction workers accessing the site under the compressed schedule would range from 33 workers per day (the anticipated average during Phase 0 under both project options) to 800 workers per day (the anticipated maximum during under Additional Housing Option). The maximum number of construction workers per day would be 640 under the Developer's Proposed Option and 880 under the Additional Housing Option. During the concurrent Phase 1 and 2 construction, limited parking would be provided in the SFPUC open space.

Under either construction schedule, construction workers driving to or from the site would be expected to park on site, or make their own parking arrangements in area parking facilities, as needed. Given the project's location relative to the Balboa Park BART station (approximately 0.6 mile) and K Ingleside Muni stop (0.1 mile), a portion of construction workers would be expected to take public transit when traveling to and from the site. As part of the construction management plan, construction workers would be encouraged by the project sponsor to access the project site by use of transit or other sustainable means of transportation (including ridesharing, bicycling, and walking).

The proposed project would be subject to San Francisco Public Works Code section 2.4.20, Action on Applications for Permits to Excavate. The contractor would be required to submit a contractor parking plan to public works in order to obtain permits for major work that has a duration of 30 days or longer.[116] The contractor parking plan would be required to identify the location of construction worker parking, number of parking spaces, and area where vehicles would enter/exit the site (for on-site parking), or how workers would travel between an off-site facility and the project site (for off-site parking), as well as the person(s) responsible for monitoring the implementation of the proposed parking plan. The use of on-street parking to accommodate construction worker parking would be discouraged by providing on-site parking for construction workers.

Additionally, most of the on-street parking to the south and east of the project site is within a two-hour time-limited residential parking permit zone, further limiting the convenience of on-street parking for construction workers. These requirements are intended to minimize the inconvenience to the neighborhood related to the availability of on-street parking within the project vicinity during project construction.

The addition of the worker-related vehicle or transit trips would not substantially affect transportation conditions because the majority of employee construction trips occur prior to the morning and evening peak hours when traffic is heaviest and the construction contractor will be required to develop and implement a contractor parking plan.

Both project options would be built out over a period of about six years in three phases, or three years under the compressed schedule. Each construction phase would have a duration of less than three years and most construction worker parking, construction vehicle staging, and construction activity would be contained on the project site. Phase 2 construction would occur after completion

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116 San Francisco Public Works Code section 2.4.20, Action on Applications for Permits to Excavate, *http://library.amlegal.com/nxt/gateway.dll/California/publicworks/publicworkscode?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$sync=1*, accessed June 12, 2018.

of Phase 1 and would overlap with occupancy of Phase 1. Phase 2 construction activities would be concentrated on the outer blocks at the north and south ends of the site: Blocks A, B, G, and H.

While the construction staging plan has not yet been finalized, based on the location of Phase 2 construction activities, construction staging during Phase 2 would likely occur adjacent to the proposed buildings, within the SFPUC Open Space and along South Street for Blocks A, B, and H and along North Street and adjacent the proposed Block G building. Temporary travel lane or sidewalk closures may be required along South Street and North Street. The proposed shared-use path extension of Plymouth Avenue and pedestrian paseo extension of Brighton Avenue would be constructed as part of Phase 2. Vehicular, pedestrian, and bicycle access for residents of the Townhomes and Inner Blocks (Blocks C, D, E, and F for the Developer's Proposed Option and Blocks C, D, E, F, I, and J for the Additional Housing Option) would be maintained through Phase 2 construction. Construction trucks and construction worker vehicles would be accommodated onsite[117] and within proposed on-street staging areas. Construction trucks would not block travel lanes, bicycle facilities, or sidewalks or block access to nearby crosswalks. Construction activities during Phase 2 and occupancy of Phase 1 would not result in hazardous conditions and would not substantially interfere with emergency access or accessibility for people walking, bicycling, or taking transit to and from the study area and around the site.

Construction activities are required to be conducted in accordance with the public works code, public works department orders, and the blue book, as applicable, to minimize the potential for hazardous conditions and to ensure safe travel in and around the site. Although construction would occur over a period of approximately six years, construction would be conducted in compliance with City requirements such that construction work can be done with the least possible interference with pedestrian, bicycle, transit, or vehicle circulation or result in hazardous conditions for pedestrians, bicycles, transit, or vehicles. Overall, because construction activities would be phased in duration, and are required to be conducted in accordance with City requirements, construction-related impacts of the proposed project would be ***less than significant***.

Mitigation: None required.

Comparison of Impact TR-1 to PEIR Impact Analysis

The PEIR did not identify any significant impacts related to construction-related transportation impacts and did not require any mitigation measures. PEIR Improvement Measure (Construction) is superseded by the requirements of the blue book regulations, which include the development of a construction management plan and review and approval by the SFMTA and public works to address overall coordination of construction activities, transportation-related circulation, access, and staging. The proposed project would result in *less-than-significant* impacts related to the effects of construction on people walking, bicycling, or driving and public transit, and no mitigation measures are required. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to construction-related transportation impacts.

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117 During Phase 2, limited parking would be provided in the SFPUC open space area.

Impact TR-2: Operation of the proposed project would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations. (Less than Significant)

The project proposes the following changes to the roadway network outside the project limits:

- Color curb changes along Ocean Avenue;
- Sidewalk widening along Lee Avenue between Ocean Avenue and the project site; the project proposes to widen the east sidewalk from 8 feet wide to 12.5 feet wide and the west sidewalk from 6 feet wide to 12.5 feet wide; and
- Reconfiguration of southbound Lee Avenue approach to Ocean Avenue from one all-movement lane to one shared through/right-turn lane and one left-turn lane.

The project does not include any design features that could cause potentially hazardous conditions. The project's streetscape improvements would primarily consist of construction of the internal street network, changes to the Lee Avenue configuration between Ocean Avenue and the project site, and the conversion of five metered parking spaces along the frontage of 1150 Ocean Avenue to metered loading spaces between the hours of 6 a.m. and 2 p.m.

Both project options would result in a general increase in vehicle traffic activity on the surrounding roadway network. Project vehicle trip assignments at the study intersections are illustrated in Figure 3.B-6a to Figure 3.B-7b, pp. 3.B-47 to 3.B-50. Access to the project site would be provided at Ocean Avenue/Lee Avenue and Frida Kahlo Way/North Access Road.

Walking and Bicycling

As discussed in "Walking Network Features," p. 3.B-37, and "Bicycle Network Features," p. 3.B-37, there are a number of existing challenges for pedestrians and bicyclists in the study area, such as high volumes of vehicle traffic, unmarked crossings, and lack of protected bicycle facilities. Additionally, the project site has limited entry points. The proposed project would include construction of pedestrian paseos, sidewalk widening on Lee Avenue between Ocean Avenue and the project site (the east sidewalk would be widened by 4.5 feet [from 8 feet to 12.5 feet] and the west sidewalk would be widened by 6.5 feet [from 6 feet to 12.5 feet]), raised crosswalks, a shared-use path, and class II and class III bicycle facilities. These modifications would enhance the walking and bicycling network in the study area and prioritize safe movement of people walking and bicycling through the site.

The Developer's Proposed Option and Additional Housing Option would contribute additional traffic from people walking, bicycling, and driving to the site. As shown in Table 3.B-13, p. 3.B-43, during the weekday a.m. peak hour, the Developer's Proposed Option would generate 428 walk trips (including 275 walk only and 153 walk-to-transit) and 29 bicycle trips. During the weekday p.m. peak hour, the Developer's Proposed Option would generate 544 walk trips (including 349 walk only and 195 walk-to-transit) and 37 bicycle trips. During the weekday a.m. peak hour, the Additional Housing Option would generate 565 walk trips (including 363 walk only and 202 walk-to-transit) and 39 bicycle trips. During the weekday p.m. peak hour, the Additional Housing Option would generate 724 walk trips (including 465 walk only and 259 walk-to-transit) and 50 bicycle trips.

The primary access points for people walking to the project site would be from the northern extension of Lee Avenue, through Unity Plaza, the pedestrian paseos connecting to Brighton Avenue and San Ramon Way, and the shared-use path connecting to Plymouth Avenue. These entrances are a short walk (less than three blocks) from the K Ingleside stop and other nearby bus stops. The primary access point for people bicycling would be from the new designated class III bicycle facilities along the North Access Road and Lee Avenue. Potential conflict points associated with the project would be most concentrated at these site access points, as discussed in the following sections.

Ocean Avenue/Lee Avenue

Under existing conditions, about 700 people walking and 19 people bicycling across the Ocean Avenue/Lee Avenue intersection were observed during the weekday a.m. peak hour and 870 people walking and 10 people bicycling through the intersection during the weekday p.m. peak hour. With the Developer's Proposed Option and Additional Housing Option, it is anticipated that there would be a substantial increase in the number of people walking and bicycling at this location. The Developer's Proposed Option would add 150 vehicles (63 inbound and 87 outbound) to this intersection during the weekday a.m. peak hour and 201 vehicles (142 inbound and 59 outbound) during the weekday p.m. peak hour. The Additional Housing Option would add 190 (80 inbound and 110 outbound) to this intersection during the weekday a.m. peak hour and 267 (192 inbound and 75 outbound) during the weekday p.m. peak hour. All inbound vehicles turning right onto Lee Avenue from Ocean Avenue to access the site would need to cross the north crosswalk and northbound class III bikeway along Lee Avenue.[118] These vehicle turning movements are not expected to create potentially hazardous conditions for people walking or bicycling, however, as drivers would generally have unobstructed sightlines and/or adequate sight distance to see approaching bicyclists and pedestrians, and drivers would need to wait for a green light and/or wait until there is a sufficient gap in the flow of people walking to clear their vehicle before entering or exiting Lee Avenue.

Frida Kahlo Way/Access Road

Under existing conditions, about 180 people walking and 12 people bicycling across the Frida Kahlo Way/Access Road intersection were observed during the weekday a.m. peak hour and 140 people walking and 9 people bicycling through the intersection during the weekday p.m. peak hour. With the Developer's Proposed Option and Additional Housing Option, it is anticipated that there would be a substantial increase in the number of people walking and bicycling at this location. The Developer's Proposed Option would add 99 vehicles (29 inbound and 70 outbound) to this intersection during the weekday a.m. peak hour and 117 vehicles (61 inbound and 56 outbound) during the weekday p.m. peak hour. The Additional Housing Option would add 139 (37 inbound and 102 outbound) to this intersection during the weekday a.m. peak hour and 156 (82 inbound and 74 outbound) during the weekday p.m. peak hour. All vehicles accessing the site from Frida Kahlo Way would need to cross the southbound class II bikeway along Frida Kahlo Way. These vehicle turning movements are not expected to create potentially hazardous conditions for bicyclists, however, as drivers entering/exiting the Access Road would generally have unobstructed sightlines and/or adequate sight distance to see approaching bicyclists, and drivers would need to wait for a

118 Eastbound left turns are prohibited at Ocean Avenue/Lee Avenue.

green light and/or wait until there is a sufficient gap in the flow of bicyclists and people walking on the sidewalk to clear their vehicle before entering or exiting the North Access Road.

Other Locations

Outside of the project's proposed access points, other potential conflict points would include right-turn, right turn on red, and permitted left-turn movements in the immediate vicinity of the project site, such as the eastbound and westbound right turns at Ocean Avenue/Frida Kahlo Way/Geneva Avenue. These conflicts would be similar in nature to conflicts at the project's access points, however, and given the expected volume of project-generated traffic added to these turning movements (less than 30 vehicles), would not create potentially hazardous conditions for people walking or bicycling to and from the site.

The Developer's Proposed Option and Additional Housing Option would contribute additional vehicle traffic from people driving to/from the site. As shown in Figure 3.B-6a, p. 3.B-47, the Developer's Proposed Option would add 47 and 98 vehicles to the westbound right-turn movement at the Ocean Avenue/Lee Avenue intersection during the weekday a.m. and p.m. peak hours, respectively. As shown in Figure 3.B-7a, p. 3.B-49, the Additional Housing Option would add 62 inbound and 132 vehicles to the westbound right-turn movement at the Ocean Avenue/Lee Avenue intersection during the weekday a.m. and p.m. peak hours, respectively. All of these westbound right-turning vehicles would utilize the rightmost travel lane on Ocean Avenue. The Developer's Proposed Option and Additional Housing Option would also contribute additional traffic from people walking to/from transit and the site. As shown in Table 3.B-13, p. 3.B-43, the Developer's Proposed Option would generate 153 and 195 walk-to-transit trips during the weekday a.m. and p.m. peak hours, respectively. The Additional Housing Option would generate 202 and 259 walk-to-transit trips during the weekday a.m. and p.m. peak hours, respectively. A portion of these walk-to-transit trips (less than 10 percent) would be expected to be traveling to/from the K Ingleside boarding island on Ocean Avenue at Lee Avenue.

Under existing conditions, people walking to/from the K/T Ingleside transit stop on Ocean Avenue at Lee Avenue were observed to cross the rightmost travel lane to access the boarding island or sidewalk instead of crossing at the crosswalk. People waited for gaps in vehicle and bicycle traffic before crossing the travel lane and vehicles and bicycles were generally traveling slowly with sufficient gaps in traffic for people to cross. While some of the project-generated transit riders would be expected to use the crosswalk at Lee Avenue to access the boarding island, it is likely that people would continue to cross the rightmost travel lane to access the boarding island.

A number of factors were considered in evaluating the project to result in potentially hazardous conditions for people walking to/from the K/T Ingleside boarding island. Such factors included the presence of an existing protected crossing at Lee Avenue, the fact that the project would add a maximum of 132 vehicles during the weekday p.m. peak hour under the Additional Housing Option, and the fact that the anticipated vehicle speeds of project traffic approaching the Lee Avenue intersection to turn right would be less than 15 miles per hour. Based on these considerations, the proposed project options would not create potentially hazardous conditions for people walking to/from the K Ingleside boarding island.

Overall, the Developer's Proposed Option and Additional Housing Option would not generate activities that would create potentially hazardous conditions for people walking or bicycling.

Driving or Public Transit Operations

An intersection operations analysis was conducted at Ocean Avenue/Lee Avenue to assess the potential of the project to create or contribute to vehicle queues and result in potentially hazardous conditions for people driving or public transit operations. The detailed calculation worksheets are provided in Attachment E, Queue Analysis Synchro Worksheets, of SEIR Appendix C2, Transit Assessment Memorandum.

Ocean Avenue/Lee Avenue Intersection Operations

Lee Avenue is located about 100 feet to the south of the Whole Foods driveway and 250 feet to the west of Harold Avenue (City College Terminal) and 450 feet to the west of Frida Kahlo Way. The analysis assumes that the proposed project would reconfigure the southbound Lee Avenue approach to Ocean Avenue from one all-movement lane to one southbound through/right-turn lane and one southbound left turn lane with class III bicycle facility (sharrows) in both directions.

Existing Conditions

Under existing conditions, 25 vehicles make a westbound right turn from Ocean Avenue onto Lee Avenue during the weekday a.m. and p.m. peak hour. The 95th percentile queue length on the westbound approach is about 12 vehicles (approximately 240 feet) during the weekday a.m. peak hour and 14 vehicles (approximately 280 feet) during the weekday p.m. peak hour. The volume for the 95th percentile queue is metered by the upstream signal Ocean Avenue/Frida Kahlo Way/Geneva Avenue. Westbound queues along Ocean Avenue can extend to Harold Avenue and may occasionally block the City College Terminal entrance and fire department station 15 driveway on Ocean Avenue. City College Terminal entrance driveway blockages were observed twice during the weekday p.m. peak hour and each occurrence lasted for between 10 and 20 seconds. Both events occurred as a result of westbound queues extending back from the Ocean Avenue/Lee Avenue intersection and the queue cleared when the signal turned green. Under existing conditions, there are 38 vehicles on the southbound approach along Lee Avenue during the weekday a.m. peak hour and 140 vehicles during the weekday p.m. peak hour. The 95th percentile queue length on the southbound approach along Lee Avenue is about two vehicles (approximately 40 feet) during the weekday a.m. peak hour and about three vehicles (approximately 60 feet) during the weekday p.m. peak hour. The southbound queues along Lee Avenue would not be expected to extend back and block the Whole Foods exit driveway on Lee Avenue.

Developer's Proposed Option

Based on the trip distribution and assignment summarized in the "Project Travel Demand and Results" section, the Developer's Proposed Option would add 47 vehicle trips to the westbound right turn from Ocean Avenue onto Lee Avenue during the weekday a.m. peak hour and 98 vehicle trips to this movement during the weekday p.m. peak hour. The Developer's Proposed Option would add 87 vehicle trips to the southbound approach (66 left turns, 21 right turns) along Lee Avenue during the weekday a.m. peak hour and 59 vehicle trips (47 left turns, 12 right turns) during the weekday p.m. peak hour.

With the addition of vehicle trips generated by the Developer's Proposed Option and reconfiguration of the southbound Lee Avenue approach to provide a southbound left-turn lane and through/right-turn lane, queue lengths along the westbound approach of Ocean Avenue would be shortened from an existing condition of about 12 vehicles in length (about 240 feet) to about 11 vehicles in length (about 220 feet) during the weekday a.m. peak hour and from an existing condition of about 14 vehicles (about 280 feet) to about 13 vehicles (about 260 feet) in the weekday p.m. peak hour. Queues would continue to be metered by the upstream signal. The Developer's Proposed Option would not be expected to increase the frequency or duration of vehicles blocking the City College Terminal entrance and would not create potentially hazardous conditions for public transit operations.

The 95th percentile queue length on the southbound approach along Lee Avenue would increase from two vehicles to about six vehicles (approximately 120 feet) in the southbound left-turn lane during the weekday a.m. and p.m. peak hour. There are no transit operations on Lee Avenue, such that this increase would not create hazardous conditions for public transit operations.

Additional Housing Option

Based on the trip distribution and assignment summarized in the "Project Travel Demand and Results" section, the Additional Housing Option would add 62 vehicle trips to the westbound right turn from Ocean Avenue onto Lee Avenue during the weekday a.m. peak hour and 132 vehicle trips to this movement during the weekday p.m. peak hour. The Additional Housing Option would add 110 vehicle trips to the southbound approach (83 left turns, 27 right turns) during the weekday a.m. peak hour and 75 vehicle trips (61 left turns, 14 right turns) during the weekday p.m. peak hour.

With the addition of vehicle trips generated by the Additional Housing Option and reconfiguration of the southbound Lee Avenue approach to provide a southbound left-turn lane and through/right-turn lane, queueing at the westbound approach along Ocean Avenue would be shortened from an existing condition of about 12 vehicles in length (about 240 feet) to about seven vehicles in length (about 140 feet) during the weekday a.m. peak hour and from an existing condition of about 14 vehicles (about 280 feet) to about 13 vehicles (about 260 feet) in the weekday p.m. peak hour.[119] Queues would continue to be metered by the upstream signal. The Additional Housing Option would not be expected to increase the frequency or duration of vehicles blocking the City College Terminal entrance and would not create potentially hazardous conditions for public transit operations.

The 95th percentile queue length on the southbound approach along Lee Avenue would increase from two vehicles to about five vehicles (approximately 100 feet) in the southbound left-turn lane

[119] Study intersections along Ocean Avenue operate as actuated-coordinated signals or operate with maximum recall. Ocean Avenue/Lee Avenue and Ocean Avenue/Frida Kahlo Way/Geneva Avenue operate with maximum recall meaning that a constant vehicle call is placed on the Ocean Avenue phase and forces the controller to time the maximum green. Actuated-coordinated signals operate with Ocean Avenue being coordinated, while other crossing minor streets are actuated. Actuated signals prioritize the through movement of the major street and use sensors to respond to the traffic present at actuated approach, so that the pattern of the signal (the length and order of each phase) depends on the traffic and can be different at every cycle. Sensors report to the signal computer and green is provided for those actuated lanes only when traffic is present and only until the traffic has vacated those lanes or the maximum time set for that phase has been reached. With the addition of project trips, there are more vehicles present on the actuated minor streets, and the green time for those specific phases are optimized. As a result, coordination is improved along Ocean Avenue, resulting in a shorter queue.

during the weekday a.m. peak hour and from three vehicles to about eight vehicles (approximately 150 feet) during the weekday p.m. peak hour.

The Developer's Proposed Option and Additional Housing Option do not include any design features that could cause major traffic hazards. Both project options would increase overall traffic levels at Ocean Avenue/Lee Avenue but would not increase the frequency or duration of vehicles blocking the City College Terminal entrance, would not substantially delay public transit, and would not create potentially hazardous conditions for public transit operations.

Other Locations

The project proposes to install a raised crosswalk across Lee Avenue about 200 feet north of signalized Ocean Avenue/Lee Avenue intersection that would not be anticipated to create potentially hazardous conditions for people driving or for public transit operations. Advance pedestrian warning signs and advance yield lines would be placed in advance of the crosswalk to notify drivers of the mid-block crossing and reduce vehicle encroachment into the crosswalk and improve drivers' view of people crossing. No transit vehicles use Lee Avenue.

Given the existing observed transit ridership and the length of the transit boarding islands nearest to the project site, the transit boarding island would have sufficient capacity to accommodate the addition of project-generated transit trips and the project would not create substantial overcrowding that would result in hazardous conditions for public transit operations. No other conflict points were identified for people driving or for public transit operations.

Overall, the Developer's Proposed Option and Additional Housing Option would not generate activities that would create hazards for people driving or public transit operations.

Other Impacts Related to Traffic Hazards

Impacts related to loading (including freight loading/service vehicles and passenger loading), are discussed in Impact TR-6a (loading within the project site) and Impact TR-6b (loading on Lee Avenue between the project site and Ocean Avenue).

As discussed above, because the project would not generate activities that would create potentially hazardous conditions for people walking, bicycling, driving or public transit operations, impacts of the proposed project would be ***less than significant***.

Mitigation: None required.

Comparison of Impact TR-2 to PEIR Impact Analysis

Potentially hazardous conditions were not specifically addressed in the PEIR. Therefore, no relevant mitigation measures were identified in the PEIR. The PEIR did not identify impacts on people walking and bicycling. Project operation would result in less-than-significant impacts related to potentially hazardous conditions for people walking, bicycling, or driving and public transit, and no mitigation measures are required. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to potentially hazardous conditions.

Impact TR-3: Operation of the proposed project would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. (Less than Significant)

The project does not involve any changes to the roadway network, other than color curb changes along Ocean Avenue, sidewalk widening along Lee Avenue between Ocean Avenue and the project site, and the reconfiguration of southbound Lee Avenue approach to Ocean Avenue from one all-movement lane to one shared through/right-turn lane and one left-turn lane, or include any design features that would interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. The project's streetscape improvements would primarily consist of construction of the internal street network, changes to the Lee Avenue configuration between Ocean Avenue and the project site, and the conversion of five metered parking spaces along the frontage of 1150 Ocean Avenue to metered loading spaces between the hours of 6 a.m. and 2 p.m.

Walking and Bicycling

As discussed in "Walking Network Features," p. 3.B-37, and "Bicycle Network Features," p. 3.B-37, there are a number of existing challenges for pedestrians and bicyclists in the study area, such as heavy vehicle volumes, unmarked crossings, and lack of protected bicycle facilities. Additionally, the project site has limited entry points. The proposed project would include construction of pedestrian paseos, raised crosswalks, a shared-use path, and class II and class III bicycle facilities. These modifications would enhance the walking and bicycling network in the study area and prioritize safe movement of people walking and bicycling through the site. The project would be designed to be compliant with the Americans with Disabilities Act.

The primary access points for people walking to the project site would be from the northern extension of Lee Avenue, through Unity Plaza, the pedestrian paseos connecting to Brighton Avenue and San Ramon Way, and the shared-use path connecting to Plymouth Avenue. These entrances are a short walk from the K Ingleside stop and other nearby bus stops. The primary access point for people bicycling would be from the designated bicycle facilities along the northern Access Road and Lee Avenue extension.

Given the expected volume of project-generated traffic on right-turn, right-turn-on-red, and permitted-left-turn movements at the project entrances and nearby intersections, the proposed project would not interfere with accessibility of people walking or bicycling to and from the site.

Overall, the Developer's Proposed Option and Additional Housing Option would promote accessibility for people walking to and through the site by connecting new pathways and bikeways to the existing sidewalk and bicycling networks. The project would not generate activities that would interfere with access or circulation for people walking or bicycling.

Emergency Access

Emergency access to the project site and nearby hospitals would be similar to existing conditions. Under existing conditions, vehicle traffic along Ocean Avenue currently impedes emergency vehicles exiting fire department station 15. During peak periods, vehicle queues extending back from the Ocean Avenue/Lee Avenue intersection were observed to occasionally partially block the fire station driveway. Driveway blockages were observed approximately five times during the weekday p.m. peak hour and each occurrence lasted between 10 and 20 seconds. No emergency vehicles were observed trying to exit the driveway during these times. Three of these events occurred when a vehicle was stopped behind a bus that was waiting for pedestrians to clear the crosswalk before turning into the City College Terminal. Two events occurred as a result of westbound queues extending back from the Ocean Avenue/Lee Avenue intersection and the queue cleared when the signal turned green. Generally, arterial roadways in the study area, such as Ocean Avenue, Geneva Avenue, and Frida Kahlo Way, provide enough clearance space to permit other vehicles to maneuver out of the path and yield right-of-way to the emergency vehicle.

Fire department station 15 is located approximately 350 feet east from the Ocean Avenue/Lee Avenue access to the project site along the north side of Ocean Avenue between Frida Kahlo Way and Harold Avenue. Emergency vehicles would have access to the site from Ocean Avenue and Lee Avenue and Frida Kahlo Way. Emergency vehicles accessing the site from fire department station 15 would likely use the nearest access point at Ocean Avenue/Lee Avenue.

As discussed under Impact TR-2, with the addition of vehicle trips generated by the Developer's Proposed Option and reconfiguration of the southbound Lee Avenue approach, queue lengths along the westbound approach of Ocean Avenue would be reduced from about 12 vehicles (or 240 feet) to about 11 vehicles (or 220 feet) during the weekday a.m. peak hour and from 14 vehicles (or 280 feet) to about 13 vehicles (or 260 feet) in the weekday p.m. peak hour.[120] Therefore, the Developer's Proposed Option would not be expected to increase the frequency or duration of vehicles blocking the fire department station 15 entrance and would not result in inadequate emergency access.

With the addition of vehicle trips generated by the Additional Housing Option, queueing at the westbound approach along Ocean Avenue would be shortened from about 12 vehicles in length (about 240 feet) to about seven vehicles in length (about 140 feet) during the weekday a.m. peak hour and from about 14 vehicles (about 280 feet) to about 13 vehicles (about 260 feet) in the weekday p.m. peak hour.[121] Therefore, the Additional Housing Option would not be expected to increase the frequency or duration of vehicles blocking the fire department station 15 entrance and would not result in inadequate emergency access.

Although there would be a general increase in vehicle traffic from the proposed project, the Developer's Proposed Option or Additional Housing Option would not inhibit emergency access to the project site or materially affect emergency vehicle response out of the station. Development of the project site, and associated increases in vehicles, pedestrians, and bicycle travel would not substantially affect emergency vehicle access to other buildings or land uses in the area or to hospitals.

Additionally, for informational purposes, the proposed internal streets (e.g., North Street, South Street) would provide a 26-foot (minimum) clear width. Clear widths would be sufficient to accommodate

[120] Ibid.
[121] Ibid.

emergency vehicles and meet fire department requirements.[122] The fire department conducted a preliminary review of the development plans and streetscape changes as currently proposed. Prior to finalizing the design and dimensions of the internal street network and on-site pedestrian network, fire department and the police department will review and approve the internal roadway configurations and dimensions, as required, to ensure emergency vehicle access within the site is acceptable.

Overall, because the proposed project would promote accessibility for people walking and biking to and through the site or interfere with emergency access or circulation, impacts of the proposed project would be ***less than significant***.

Mitigation: None required.

Comparison of Impact TR-3 to PEIR Impacts Analysis

The PEIR did not identify impacts on people walking and bicycling and the PEIR did not specifically address emergency access. PEIR Improvement Measure (Walking/Accessibility) is not applicable to the proposed project because there are already existing pedestrian countdown signals at signalized intersections serving the project site (i.e., Ocean Avenue/Lee Avenue and Frida Kahlo Way/Access Road). Project operation would result in a less-than-significant impact related to the accessibility of people walking or bicycling to and from the project site, and adjoining areas, and emergency access, and no mitigation measures are required. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to walking/biking, accessibility, and emergency access impacts.

Impact TR-4: Operation of the proposed project would not substantially delay public transit. (Less than Significant)

The project would not result in the relocation or removal of any existing transit stops or other changes that would alter transit service. However, the project would generate up to 267 vehicle trips at the Ocean Avenue/Lee Avenue intersection which is adjacent to the 29 Sunset bus line and K Ingleside center-running light-rail line, and up to 156 vehicle trips at the Frida Kahlo Way/Access Road intersection which is adjacent to the 43 Masonic bus line.

Transit Delay

The impact of the Developer's Proposed Option and Additional Housing Option on transit delay (traffic congestion, transit reentry delay, and passenger boarding delay) was evaluated along the following corridors and Muni lines for the weekday a.m. and p.m. peak hours:

- Frida Kahlo Way from Judson Avenue to Ocean Avenue (Line 43)
- Ocean Avenue from Plymouth Avenue to San Jose Avenue (Lines K, 29, 49)
- Geneva Avenue from City College Terminal to San Jose Avenue (Lines 8, 8BX, 43, 54)

The results of the transit delay analysis are summarized in **Table 3.B-18, Transit Delay Analysis**, and provided in Attachment C, Corridor Delay Analysis Synchro Worksheets, and Attachment D,

[122] San Francisco Fire Code section 503.2.1, *http://sf-fire.org/501-street-widths-emergency-access*, accessed May 25, 2018.

Transit Reentry and Passenger Boarding Delay Analysis Calculations, of SEIR Appendix C2, Transit Assessment Memorandum.

TABLE 3.B-18
TRANSIT DELAY ANALYSIS

Corridor	Weekday a.m. Peak Hour (seconds of delay)		Weekday p.m. Peak Hour (seconds of delay)	
	Northbound/ Eastbound	Southbound/ Westbound	Northbound/ Eastbound	Southbound/ Westbound
Transit Delay				
Existing Conditions				
Frida Kahlo Way	5	15	5	28
Ocean Avenue	121	143	124	144
Geneva Avenue	79	53	75	46
Existing plus Developer's Proposed Option				
Frida Kahlo Way	18	74	29	101
Ocean Avenue	187	182	182	244
Geneva Avenue	99	127	117	127
Existing plus Additional Housing Option				
Frida Kahlo Way	21	87	46	111
Ocean Avenue	183	207	208	272
Geneva Avenue	109	137	133	137
Project-Related Increase in Delay				
Developer's Proposed Option				
Frida Kahlo Way	13	59	24	73
Ocean Avenue	66	39	58	100
Geneva Avenue	20	74	42	81
Additional Housing Option				
Frida Kahlo Way	16	72	41	83
Ocean Avenue	62	64	84	128
Geneva Avenue	30	84	58	91

SOURCE: Kittelson & Associates, Inc. 2018.
NOTES:
Transit delay includes corridor delay, transit reentry delay, and passenger boarding delay.

Developer's Proposed Option

As shown in Table 3.B-18, vehicle and transit trips generated by the Developer's Proposed Option would increase transit delay by a maximum of 73 seconds along Frida Kahlo Way (southbound direction, weekday p.m. peak hour), a maximum of 100 seconds along Ocean Avenue (westbound direction, weekday p.m. peak hour), and a maximum of 81 seconds along Geneva Avenue (westbound direction, weekday p.m. peak hour). The majority of the transit delay increase is attributable to the increase in passenger boarding delay resulting from the project-generated transit riders. The Developer's Proposed Option would not create additional transit reentry delay during the a.m. or p.m. peak hours.

The Developer's Proposed Option would not result in transit delay greater than or equal to four minutes. Therefore, the Developer's Proposed Option would result in a ***less-than-significant*** impact related to transit delay.

Additional Housing Option

As shown in Table 3.B-18, vehicle and transit generated by the Additional Housing Option would increase transit delay by a maximum of 83 seconds along Frida Kahlo Way, (southbound direction, weekday p.m. peak hour), a maximum of 128 seconds along Ocean Avenue (westbound direction, weekday p.m. peak hour), and a maximum of 91 seconds along Geneva Avenue (westbound direction, weekday p.m. peak hour). The majority of the transit delay increase is attributable to the increase in passenger boarding delay resulting from the project-generated transit riders. The Additional Housing Option would not create additional transit reentry delay during the a.m. or p.m. peak hours.

The Additional Housing Option would not result in transit delay greater than or equal to four minutes.[123] Therefore, the Additional Housing Option would result in a ***less-than-significant*** impact related to transit delay.

City College Terminal

The impact of the Developer's Proposed Option and Additional Housing Option on operations of the City College Terminal was evaluated for the weekday a.m. and p.m. peak hours. The detailed analysis is included in SEIR Appendix C2, Transit Assessment Memorandum, and summarized in this section.

The evaluation assesses the change in queue lengths at Ocean Avenue/Lee Avenue and Ocean Avenue/Frida Kahlo Way/Geneva Avenue and potential for queues to spillback and block transit vehicle access or egress to the City College Terminal.

Developer's Proposed Option

Under existing conditions, vehicle queues on the westbound approach at the intersection of Ocean Avenue/Lee Avenue were observed to extend past the City College Terminal entrance approximately five times during the weekday p.m. peak hour and each occurrence lasted for between 10 and 20 seconds. Three of these events occurred when a vehicle was stopped behind a bus that was waiting for pedestrians to clear the crosswalk before turning into the City College Terminal. Two events occurred as a result of westbound queues extending back from the Ocean Avenue/Lee Avenue intersection, and the queue cleared when the signal turned green. With the addition of vehicle trips generated by the Developer's Proposed Option, the queue lengths for westbound movements would be reduced from about 12 vehicles (or 240 feet) to about 11 vehicles

[123] Ibid

(or 220 feet) during the weekday a.m. peak hour and from 14 vehicles (or 280 feet) to about 13 vehicles (or 260 feet) in the weekday p.m. peak.[124]

Under existing conditions, vehicle queues on the southbound approach at the intersection of Ocean Avenue/Frida Kahlo Way/Geneva Avenue are approximately seven vehicles (or about 140 feet) and do not block the City College Terminal exit driveway. With the addition of vehicle trips generated by the Developer's Proposed Option, the queue length would remain the same during the weekday a.m. and p.m. peak hours.[125]

The addition of project-generated vehicle trips would not result in increased frequency or duration of vehicles blocking the City College Terminal entrance or exit.

Additional Housing Option

Under existing conditions, vehicle queues on the westbound approach at the intersection of Ocean Avenue/Lee Avenue were observed to extend past the City College Terminal entrance approximately five times during the weekday p.m. peak hour and each occurrence lasted for between 10 and 20 seconds. Three of these events occurred when a vehicle was stopped behind a bus that was waiting for pedestrians to clear the crosswalk before turning into the City College Terminal. Two events occurred as a result of westbound queues extending back from the Ocean Avenue/Lee Avenue intersection and the queue cleared when the signal turned green. With the addition of vehicle trips generated by the Additional Housing Option, the queue lengths for westbound movements would be shortened from about 12 vehicles in length (about 240 feet) to about seven vehicles in length (about 140 feet) during the weekday a.m. peak hour and from about 14 vehicles (about 280 feet) to about 13 vehicles (about 260 feet) in the weekday p.m. peak hour.[126]

Under existing conditions, vehicle queues on the southbound approach at the intersection of Ocean Avenue/Frida Kahlo Way/Geneva Avenue are approximately seven vehicles (or about 140 feet) and do not block the City College Terminal exit driveway. With the addition of vehicle trips generated by the Additional Housing Option, the queue length would remain the same during the weekday a.m. and p.m. peak hours.[127]

The addition of project-generated vehicle trips would not result in increased frequency or duration of vehicles blocking the City College Terminal entrance or exit.

Given the considerations described above, the Developer's Proposed Option and Additional Housing Option would have a ***less-than-significant*** impact on transit delay.

Mitigation: None required.

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[124] The project would modify the southbound approach to include a southbound through/right-turn lane and a southbound left-turn lane. This change to intersection geometry along with the addition of project vehicle trips causes the signal to operate more efficiently, resulting in a reduction in delay and 95th percentile queue lengths. When more vehicles are present for a previously underutilized phase (the minor street approach), the green time is optimized and queue lengths are reduced on coordinated approaches. The 95th percentile queue length is the queue length that would not be exceeded 95 percent of the time.

[125] Ibid.

[126] Ibid.

[127] Ibid.

Comparison of Impact TR-4 to PEIR Impact Analysis

As discussed in SEIR Section 3.B.3, Summary of Balboa Park Station Area Plan PEIR Transportation Section, p. 3.B-1, under the 2025 with Area Plan scenario, transit capacity utilization impacts were identified on the K Ingleside line and transit delay impacts were identified at Ocean Avenue/Geneva Avenue/Frida Kahlo Way and the new Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp intersections. Project operation would result in a less-than-significant impact related to public transit. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR.

Transit Capacity Utilization

The Balboa Park Station Area Plan PEIR identified a significant impact related to transit ridership and capacity on the K Ingleside line. The PEIR concluded that implementation of the area plan would contribute about 6 percent to the future ridership on the K Ingleside line at the maximum load point,[128] increasing the already exceeded capacity utilization from 100 percent to 106 percent during the p.m. peak period. As such, the area plan was considered to have a significant contribution to adverse transit conditions on the K Ingleside line. No feasible mitigation measure was identified and the impact was determined to be significant and unavoidable.

Since the PEIR's certification in December 2008, the planning department modified significance criteria related to transit capacity. This topic is no longer considered under the CEQA framework, as discussed in the *Transportation Impact Analysis Guidelines Update: Summary of Changes Memorandum*[129] and the *Transportation Impact Analysis Guidelines for Environmental Review – Update, Public Transit Memo and Appendices*, February 2019.[130]

The department removed the transit capacity criterion to be consistent with state guidance[131] regarding not treating addition of new users as an adverse impact and to reflect funding sources for and policies that encourage additional ridership. Since 2008, San Francisco has adopted additional funding sources to address transit capacity demand associated with new development or population growth, although they were not adopted as CEQA mitigation. This includes area plans, including the Balboa Park Community Improvements Fund (approved May 2010), the Transportation Sustainability Fee (December 2015), and Proposition B (November 2014). The former two establish impact fees from new development that is used to fund expansion and reliability improvements for transit service, with some fees allocated to both local and regional transit providers. Proposition B (Charter section 8A.105) establishes a base amount of set aside funds provided to the SFMTA, with yearly adjustments based on population growth. It also mandates that the SFMTA use 75 percent of the increase in the base amount funds "to make transit

128 The maximum load point is the point (i.e., a bus stop or boarding location) at which the highest number of passengers are aboard a transit vehicle on a designated bus line and route direction at a specified time or time period.

129 San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update: Summary of Changes*, February 2019, *http://default.sfplanning.org/publications_reports/TIA_Guidelines_Summary_of_Changes_Memo.pdf*, accessed April 16, 2019.

130 San Francisco Planning Department, *Transportation Impact Analysis Guidelines for Environmental Review – Update, Public Transit Memo and Appendices*, February 2019, *http://default.sfplanning.org/publications_reports/TIA_Guidelines_Transit_Memo.pdf*, accessed February 14, 2019.

131 Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018, page 19, *http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf*, accessed June 5, 2019.

system improvements to the Municipal Railway to improve the system's reliability, frequency of service, capacity, and state of good repair."

San Francisco policies that encourage transit ridership include Transit First, area plans, including Balboa Park station area plan (for example, Objective 2.4 encourages walking, biking, public transit as the primary means of transportation, and Objective 3.1 establishes parking standards and controls that promote quality of place, affordable housing, and transit-oriented development), and the Transportation Demand Management Program (adopted 2017).

For informational purposes, refer to Appendix C2, Transit Assessment Memorandum, for a discussion of project ridership and capacity.

Transit Delay

The PEIR identified significant impacts to transit delay under the 2025 with Area Plan scenario and project-level analysis of 1150 Ocean Avenue (former Kragen Auto Parts site). Transit delay impacts identified at Ocean Avenue/Geneva Avenue/Frida Kahlo Way and the reconfigured Geneva Avenue/I-280 Ramp intersections, intersections are discussed in the following sections.

Ocean Avenue/Geneva Avenue/Frida Kahlo Way. The PEIR identified a significant impact to transit delay at the Ocean Avenue/Geneva Avenue/Frida Kahlo Way intersection as a result of proposed changes to the intersection configuration, and not due to increased vehicle traffic generated by area plan development. Changes proposed by the area plan included elimination of the channelized westbound and southbound right-turn pockets and restriping of the eastbound and northbound approaches. The intersection reconfiguration was reported to significantly impact intersection operations and result in congestion that could affect operations of the K Ingleside on Ocean Avenue and Muni buses on southbound Frida Kahlo Way. No feasible mitigation measures were identified that would reduce this impact to a less-than-significant level. Therefore, this was identified as a significant and unavoidable impact.

The Ocean Avenue/Geneva Avenue/Frida Kahlo Way intersection was reconfigured as part of the Ocean Avenue Corridor Design Project[132] and the configuration proposed in the PEIR is included as part of existing conditions in this SEIR. Analysis conducted for this SEIR showed that there would be no significant effects related to transit delay at this location. Therefore, the proposed project options would not have any new or substantially more severe effects related to transit delay at this location than those identified in the PEIR.

Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp. The PEIR identified a significant impact to transit delay at the reconfigured Geneva Avenue/I-280 Ramps intersection as a result of the proposed reconfiguration of the intersections and freeway ramps, and not due to increased vehicle traffic generated by area plan development. As reported in the PEIR, operations would worsen from LOS D to LOS F due to the consolidation of all movements into a single

[132] San Francisco Department of Public Works, Ocean Avenue Corridor Design Project website, *https://www.sfpublicworks.org/project/ocean-avenue-corridor-design-project*, accessed April 16, 2019.

intersection. No feasible mitigation measures were identified that would reduce this impact to a less-than-significant level. Therefore, this was identified as a significant and unavoidable impact.

The reconfiguration of the Geneva Avenue/I-280 Ramps is anticipated to be completed by 2024.[133] The recommended alternative would create a partial split interchange in which northbound I-280 traffic would exit onto Geneva Avenue but enter the freeway from Ocean Avenue; southbound traffic would still be able to exit both Geneva and Ocean avenues while only entering from Geneva Avenue. The reconfiguration of the Geneva Avenue/I-280 Ramps is included as part of cumulative conditions in this SEIR.

Operation of the Balboa Reservoir Project would result in a less-than-significant impact related to transit delay. Therefore, the proposed project would not have any new or substantially more-severe effects than those identified in the PEIR related to transit delay impacts.

Impact TR-5: Operation of the proposed project would not cause substantial additional VMT or substantially induce automobile travel. (Less than Significant)

VMT Assessment

As presented in Table 3.B-9, p. 3.B-27, the existing average daily VMT per capita for the TAZ in which the project site is located (i.e., TAZ 915), is below the existing regional average daily VMT:

- For the residential uses, the existing average household daily VMT per capita is 11.7, which is about 32 percent below the existing regional average household daily VMT per capita of 17.2.
- For the childcare use, the existing average daily office VMT per employee is 13, which is about 33 percent below the existing regional average daily office VMT per employee of 19.1.
- For the retail uses, the average daily VMT per retail employee is 1.9, which is about 87 percent below the existing regional average daily retail VMT per employee of 14.9.[134,135]

Given the project site is located in an area where existing VMT is more than 15 percent below the existing regional average, the project's residential, retail, and childcare uses would not cause substantial additional VMT and impacts would be less than significant. Furthermore, the project site meets the Proximity to Transit Stations screening criterion (including located within a half mile of an existing major transit stop), which also indicates the project's uses would not cause substantial additional VMT.

The Developer's Proposed Option would construct a 650-space public parking garage to partially replace the existing 1,007-space surface parking lot on the project site. The proposed public parking

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133 SFCTA, I-280 Interchange Modifications at Balboa Park Project website, *https://www.sfcta.org/I-280-interchange-modifications-balboa-park-project*, accessed April 16, 2019.

134 Retail travel is not explicitly captured in San Francisco chained activity modeling process, rather, there is a generic "Other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other nonwork, 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; school enrollment, and number of households) represents the size, or attraction, of the zone for this type of "Other" purpose travel.

135 San Francisco Planning Department, Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis for Balboa Reservoir Project, November 15, 2018.

facility would not result in a substantial increase in VMT because it would replace an existing facility and would not increase the amount of parking available.[136]

In addition, the project would be subject to a TDM program. Measures included in the project's TDM plan are presented in "Transportation Demand Management Program," p. 3.B-34.

Induced Automobile Travel Assessment

The project is not a transportation project. However, the project would include features that would alter the transportation network. These features include items such as new sidewalks, local streets, on-street loading, and bicycle lanes. These features fit within the general types of projects that would not substantially induce automobile travel. Therefore, impacts related would be less than significant.

Given the considerations described above, no significant VMT impacts would occur as a result of the project.

Mitigation: None required.

Comparison of Impact TR-5 to PEIR Impact Analysis

The San Francisco Planning Commission replaced automobile delay (vehicle level of service) with the VMT significance criteria (resolution 19579) in March 2016. As a result, the PEIR did not analyze VMT or induced automobile travel. The PEIR did not identify any significant impacts related to VMT or induced automobile travel impacts and did not require any mitigation measures. The project would result in a less-than-significant impact related to additional VMT and induced automobile travel, and no mitigation measures are required. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to VMT and induced automobile travel impacts.

The loading impact analysis is broken out into two different impact statements. The first impact statement, Impact TR-6a, reflects the analysis of project's on-site loading activities. The second impact statement, Impact TR-6b, reflects the project's impacts on off-site loading activities, specifically on Lee Avenue between Ocean Avenue and the project site.

Impact TR-6a: The proposed supply of freight and passenger loading spaces within the project site would not meet peak hour demand by building, but would not create potentially hazardous conditions or significant delay affecting transit, other vehicles, bicycles, or people walking (Less than Significant).

Proposed loading facilities are described in "Loading Features," p. 3.B-38, and potential locations of on-street parking and loading areas are shown in SEIR Chapter 2, Project Description, Figure 2-11, p. 2-25. Freight and passenger loading demand is presented in Table 3.B-16, p. 3.B-51.

136 San Francisco Planning Department, Supplementary Guidance Memorandum on p. 3, *http://default.sfplanning.org/publications_reports/TIA_Guidelines_Supplementary_Guidance_Memo.pdf*, accessed April 16, 2019.

Developer's Proposed Option

The Developer's Proposed Option would include six on-street freight loading (yellow curb) spaces and eight passenger loading (white curb) areas along the internal streets.

Freight Loading

The Developer's Proposed Option would generate about 41 daily delivery/service vehicle trips, and would have a demand for up to one freight loading space at each individual building during the average and peak hours, or a total of 10 spaces. However, on a sitewide basis, the Developer's Proposed Option would generate a demand for two loading spaces during the average hour and three loading spaces during the peak hour of freight loading activity. The proposed six on-street loading/service vehicle spaces would not satisfy the average and peak hour freight loading demand on a per-building basis but would satisfy the average and peak hour freight loading demand for the site overall. It is likely that delivery vehicles would be more concentrated near the uses they are attempting to serve. If delivery vehicles are destined for the same land use or units within the same building, there would be an uneven distribution of demand, and while there are enough loading spaces across the entire site, there may not be enough nearby loading spaces to accommodate the localized demand. Where commercial loading zones are not available, delivery vehicles could temporarily block the travel lane during loading/unloading of goods, resulting in a temporary lessening of the capacities of internal roadways. This could result in minor congestion and conflicts with vehicle traffic and bicycle circulation within the project site. Given the anticipated location of freight loading zones and the ability of the internal roadways to accommodate any queueing or double-parked vehicles, as well as the distance from the external street network (Lee Avenue/South Street would be approximately 400 feet from the Lee Avenue/SFPUC Open Space intersection and the northern end of Lee Avenue would be approximately 420 feet from Frida Kahlo Road), the Developer's Proposed Option would not cause secondary effects outside of the project site and potential impacts would be less than significant.

Residential Move-In/Move-Out

It is anticipated that residents conducting move-in/move-out activities with passenger vehicles or small vans/trucks would utilize parking spaces within proposed building garages for move-in/move-out activities. Should on-street parking be necessary for move-in/move-out activities, individuals or building management would be required to reserve spaces through SFMTA's temporary signage program. Typically, these activities occur during off-peak times, such as in the evenings and on weekends when there are lower volumes of vehicle traffic, people walking, and bicycling. Therefore, residential move-in/move-out operations would not substantially affect conditions in the study area, and the Developer's Proposed Option would result in a less-than-significant impact related to residential move-in/move-out activities.

Garbage/Recycling Collection

Garbage, recycling and green waste storage would be conducted in designated areas within each building. On collection days, garbage, recycling, and green waste would be brought curbside. Bins would present a minor and temporary obstacle for people walking, but would not substantially affect walking conditions or accessibility given the temporary nature of the obstruction and the fact that garbage and recycling collection activities typically occur during off-peak times. Consistent with current practice across San Francisco, Recology trucks would have direct access to the curbside locations from proposed commercial loading (yellow curb) zones. Where commercial loading zones are not an option for Recology trucks, trucks may temporarily block the travel lane during collection. There would be a temporary lessening of the capacities on internal roadways due to the slower movement and larger turning radii of garbage and recycling trucks, which could result in minor congestion and conflicts with traffic, bicycle, and walking circulation within the project site. However, potential impacts would be considered less than significant given the anticipated location of garbage/recycling collection and the ability of the internal roadways to accommodate any resulting queueing, as well as the distance from the external street network (Lee Avenue/South Street would be approximately 400 feet from the Lee Avenue/SFPUC Open Space intersection and the northern end of Lee Avenue would be approximately 420 feet from Frida Kahlo Road), garbage/recycling collection activity under the Developer's Proposed Option would not cause secondary effects outside of the project site.

Passenger Loading

The Developer's Proposed Option would generate a peak hour demand of up to four passenger loading spaces, or less than one passenger loading space per building, during the peak hour of demand. The estimated demand for passenger loading spaces includes demand generated by drop-off/pick-up in private vehicles, taxis, and TNC vehicles (e.g., Uber and Lyft). The eight proposed passenger loading areas along internal streets would satisfy the peak hour passenger loading demand. The passenger loading spaces would be located in proximity to building entrances and distributed around the site. Therefore, the proposed supply would meet demand in terms of number, size, and location of spaces and the Developer's Proposed Option would result in a less-than-significant impact related to passenger loading.

Daycare Drop-Off and Pick-Up

The daycare and community space would be located on the ground floor of Block B (see SEIR Chapter 2, Project Description, Figure 2-5, p. 2-16). A provider has not yet been identified but typical hours of operation would likely occur between 7:30 a.m. and 6 p.m. Drop-off and pick-up for the daycare facility would be from the proposed passenger loading (white curb) zones on South Street. Passenger loading areas would be signed and designated for drop-off/pick-up between the hours of 7:30 and 9:30 a.m. and 4 and 6 p.m., depending on hours of operation. There would be approximately 11 on-street spaces on the south side of South Street, near the building lobby, and 11 on-street spaces on the north side of South Street. As shown in Table 3.B-14, p. 3.B-44, the childcare facility would generate 30 vehicle trips (about 15 inbound and 15 outbound) during the weekday a.m. and p.m. peak hours. This level of demand could be accommodated within the available curbside loading area and the Developer's Proposed Option would result in a less-than-significant impact related to daycare drop-off and pick-up.

Additional Housing Option

The Additional Housing Option would include six on-street freight loading (yellow curb) spaces and eight passenger loading (white curb) areas along the internal Balboa Reservoir streets.

Freight Loading

The Additional Housing Option would generate about 49 daily delivery/service vehicle trips, and would have a demand for up to one freight loading space at each individual building during the average and peak hours, or a total of 12 spaces. However, on a sitewide basis, the Additional Housing Option would generate a demand for three loading spaces during the average and peak hours of freight loading activity. The proposed six on-street loading/service vehicle spaces would satisfy the average and peak hour freight loading demand for the site overall. It is likely that delivery vehicles would attempt to concentrate near the uses they are attempting to serve. If delivery vehicles are destined for the same land use or units within the same building, there would be an uneven distribution of demand. While there are enough loading spaces across the entire site, there may not be enough nearby loading spaces to accommodate the localized demand. Where commercial loading zones aren't available, delivery vehicles could temporarily block the travel lane during loading/unloading of goods, resulting in a temporary lessening of the capacities of internal roadways. This could result in temporary congestion and conflicts with vehicle traffic, bicycle, and walking circulation within the project site. Additionally, given the anticipated location of freight loading zones and the ability of the internal roadways to accommodate any queueing or double-parked vehicles, as well as the distance from the external street network (Lee Avenue/South Street would be approximately 400 feet from the Lee Avenue/SFPUC Open Space intersection and the northern end of Lee Avenue would be approximately 420 feet from Frida Kahlo Road), freight loading demand generated by the Additional Housing Option would not cause secondary effects outside of the project site and would be considered less than significant.

Residential Move-In/Move-Out

It is anticipated that residents conducting move-in/move-out activities with passenger vehicles or small trucks would utilize parking spaces within proposed building garages for move-in/move-out activities. Should on-street parking be necessary for move-in/move-out activities, individuals or building management would be required to reserve spaces through SFMTA's temporary signage program. Typically, these activities occur during off-peak times, such as in the evenings and on weekends when there are lower volumes of vehicle traffic, people walking, and bicycling. Therefore, residential move-in/move-out operations would not substantially affect conditions in the study area, and the Additional Housing Option would result in a less-than-significant impact related to residential move-in/move-out activities.

Garbage/Recycling Collection

Garbage, recycling and green waste storage would be conducted in designated areas within each building. On collection days, garbage, recycling, and green waste would be brought curbside. Bins would present a minor and temporary obstacle for people walking, but would not substantially affect walking conditions or accessibility given the temporary nature of the obstruction and the fact that garbage and recycling collection activities typically occur during off-peak times. Consistent with current practice, Recology trucks would have direct access to the curbside locations from proposed commercial loading (yellow curb) zones. Where commercial loading zones aren't available, trucks would temporarily block the travel lane during collection. There would be a temporary lessening of the capacities on internal roadways due to the slower movement and larger turning radii of garbage and recycling trucks, which could result in minor congestion and conflicts with traffic, bicycle, and walking circulation within the site. However, potential impacts would be considered less than significant due the temporary nature and the fact that garbage and recycling collection activities typically occur during off-peak times. Additionally, given the anticipated location of garbage/recycling collection and the ability of the internal roadways to accommodate any resulting queueing, as well as the distance from the external street network (Lee Avenue/South Street would be approximately 400 feet from the Lee Avenue/SFPUC Open Space intersection and the northern end of Lee Avenue would be approximately 420 feet from Frida Kahlo Road), garbage/recycling collection activity under the Additional Housing Option would not cause secondary effects outside of the project site.

Passenger Loading

The Additional Housing Option would generate a peak hour demand of up to four passenger loading spaces, or less than one passenger loading space per building, during the peak hour of demand. The estimated demand for passenger loading spaces includes demand generated by drop-off/pick-up in private vehicles, taxis, and TNC vehicles (e.g., Uber and Lyft). The eight proposed passenger loading areas along internal streets would satisfy the peak hour passenger loading demand. The passenger loading spaces would be located in proximity to building entrances and distributed around the site. Therefore, the proposed supply would meet demand in terms of number, size, and location of spaces and the Additional Housing Option would result in a less-than-significant impact related to passenger loading.

Daycare Drop-Off and Pick-Up

As under the Developer's Proposed Option, the childcare and community space would be located on the ground floor of Block B (see SEIR Chapter 2, Project Description, Figure 2-5, p. 2-16. Drop-off and pick-up for the daycare facility would be from a passenger loading (white curb) zones on South Street. Passenger loading areas would be signed and designated for drop-off/pick-up between the hours of 7:30 and 9:30 a.m. and 4 and 6 p.m., depending on hours of operation. There would be approximately 11 on-street spaces on the south side of South Street, near the building lobby, and 11 on-street spaces on the north side of South Street. As shown in Table 3.B-14, p. 3.B-44, the childcare facility would generate 30 vehicle trips (about 15 inbound and 15 outbound) during the weekday a.m. and p.m. peak hours. This level of demand could be accommodated within the available curbside loading area and the Additional Housing Option would result in a less-than-significant impact related to daycare drop-off and pick-up.

Given the considerations described above, the Developer's Proposed Option and Additional Housing Option would not result in a freight or passenger loading deficit and would have a ***less-than-significant*** impact on freight and passenger loading within the project site.

Mitigation: None required.

Comparison of Impact TR-6a to PEIR Impact Analysis

The PEIR did not assess loading impacts at the program level and did not require any mitigation measures. The project would result in a less-than-significant impact related to freight and passenger loading within the project site, and no mitigation measures are required. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to freight and passenger loading within the project site.

Impact TR-6b: Operation of the proposed project, including proposed street network changes, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. (Significant and Unavoidable)

Proposed loading facilities are described in "Loading Features," p. 3.B-38, and potential locations of on-street parking and loading areas are shown in SEIR Chapter 2, Project Description, Figure 2-11, p. 2-25. Freight and passenger loading demand is presented in Table 3.B-16, p. 3.B-51.

As discussed in the Existing Conditions section on Freight Loading, SEIR p. 3.B-27, there were 76 total loading events observed either on Lee Avenue, within the Whole Foods loading dock, and within the delivery truck access easement over a 17-hour time period between 5 a.m. and 10 p.m. on Tuesday March 26, 2019, when City College was in session. Of these freight and passenger loading events, 52 (or 68 percent) were related to Whole Foods and 31 (58 percent) of these Whole Foods-related events were vehicles stopped on Lee Avenue. Of the 52 loading/unloading events attributed to Whole Foods, six vehicles were classified as passenger cars and 15 vehicles were classified as light-duty, two-axle, four–tire, single-unit trucks, and the remaining 31 vehicles were classified as two-axle, six–tire, single-unit trucks or larger. A total of 43 (83 percent) of the loading activity occurred within the five-hour time period between 7 a.m. and 12 p.m. Three events occurred prior to 7 a.m. and the remaining six events occurred between 1 and 9 p.m.

The PEIR anticipated that the 1150 Ocean Avenue site (former Kragen Auto Parts site and now the Avalon Ocean Avenue Apartments and Whole Foods Grocery Store) would generate a total of 24 daily truck trips. Courier network services such as Instacart, GrubHub, and AmazonFresh were not used as much by customers at the time of the PEIR's transportation analysis as they are under existing conditions. Thus, the PEIR did not state the number of non-truck daily loading trips. In contrast, San Francisco's transportation analysis now takes these types of services into account when identifying a proposed project's loading demand. Based on information provided by the Whole Foods store manager and data collected at 1150 Ocean Avenue Whole Foods, the observed average and peak hour loading demand is three and ten vehicles, respectively. The typical and maximum duration of loading activity is 14 minutes and 92 minutes, respectively.[137]

Under existing conditions, Lee Avenue is a dead-end street, with no through traffic; "No Parking" signs are posted on both sides of Lee Avenue.[138] In its current condition, Lee Avenue essentially functions as a loading zone that provides convenient on-street loading supply to meet Whole Foods' loading demand and accommodate deliveries and passenger loading activity related to other nearby businesses along Ocean Avenue.

[137] One vehicle was present at the beginning of the data collection period (5 a.m.) and departed at 10:34 a.m. This vehicle was stopped for a duration of over 5.5 hours. However, this length of stay does not represent typical turnover during hours of operation and is therefore excluded from the calculation of typical average and maximum duration.

[138] 1150 Ocean Avenue, Case No. 2006.0884CEU Motion No. 17885, Hearing date: May 21, 2009, *http://commissions.sfplanning.org/cpcpackets/2016-003525CUA.pdf*, accessed April 26, 2019.

Based on observations, the existing freight loading operations at Whole Foods do not fully adhere to the measures outlined in the 1150 Ocean Avenue (former Kragen Auto Parts site) project conditions of approval which requires Whole Foods to utilize the off-street area for all loading. The lack of implementation of the required loading conditions of approval does not impede existing vehicle traffic on Lee Avenue as the existing loading demand is accommodated within the on-street loading supply along Lee Avenue between the project site and Ocean Avenue. The existing condition does not create potentially hazardous conditions for people walking, bicycling, or driving or significant delay affecting transit. Moreover, essentially the only other vehicle traffic on Lee Avenue is from cars exiting the Whole Foods parking garage.

Project Analysis

The proposed project would extend Lee Avenue into the project site, altering Lee Avenue's current status as a dead-end street and de facto loading area for passenger pickup and drop-off and freight deliveries. This reconfiguration of Lee Avenue would reduce the supply of on-street loading available to Whole Foods and nearby land uses. The existing peak hour curbside loading demand along Lee Avenue (including trucks using the delivery truck access easement) equates to approximately 180 linear feet or five delivery/service vehicles of approximately 36 feet in length, including four feet between vehicles to load/unload goods.[139] Given that Lee Avenue would change from a dead-end street to a through street and the number of travel lanes would increase from two to three with implementation of the project, on-street loading would no longer be accommodated on Lee Avenue, which could result in a loading deficit if truck drivers were not able to locate convenient replacement loading spaces. Moreover, should drivers attempt loading operations on Lee Avenue despite the changes to the street, such loading activity could result in secondary effects on people bicycling and public transit delay:

- **Vehicle Double Parking in Lee Avenue's Northbound Travel Lane:** Vehicles may park in the northbound travel lane along Lee Avenue to conduct loading/unloading of goods. During the weekday p.m. peak hour, the Developer's Proposed Option would add 142 vehicles to northbound Lee Avenue and the Additional Housing Option would add 192 vehicles to northbound Lee Avenue. During the weekday p.m. peak hour, there would be approximately 979 and 1,013 vehicles on the Ocean Avenue westbound approach to Lee Avenue under existing conditions with the Developer's Proposed Option and Additional Housing Option, respectively. Given the queue of right-turning vehicles in the rightmost travel lane, some drivers may shift to the center lane shared by the Muni K Ingleside line.

  As described under Impact TR-4 and assuming no loading deficit along Lee Avenue, the Developer's Proposed Option would add a maximum of 100 seconds of delay and the Additional Housing Option would add a maximum of 128 seconds of delay to transit vehicles operating along Ocean Avenue (including the K Ingleside). However, if loading were to occur on Lee Avenue, although unlikely, it is possible that delays to the K Ingleside could exceed the four-minute threshold of significance for transit delay. Furthermore, this situation could create potentially hazardous conditions for people driving and bicycling northbound on Lee Avenue

[139] As noted in 1150 Ocean Avenue Whole Foods Loading Survey, p. 3.B-28, while the delivery truck access easement is intended for large trucks backing into the Whole Foods loading dock, it is also used for loading, in which drivers leave their trucks and deliver goods, although such use is not within the terms of the easement. Therefore, while such loading activity might be anticipated to continue in the future with project implementation, use of the delivery truck access easement is not considered part of the project's proposal for accommodating existing freight loading that would be displaced.

as they may have to cross into the opposing southbound travel lane to avoid the commercial vehicles stopped and blocking the northbound travel lane. Based on existing counts and estimated travel demand, under the Developer's Proposed Option there would be 91 and 169 northbound vehicles during the weekday a.m. and p.m. peak hours, respectively. Under the Additional Housing Option there would be 108 and 219 vehicles traveling northbound during the weekday a.m. and p.m. peak hours, respectively. Based on existing counts and estimated travel demand, there could be about 25 bicycles traveling on this segment of Lee Avenue during the weekday p.m. peak hour under both project options.

- **Vehicle Double Parking in Lee Avenue's Southbound Travel Lane:** Vehicles may park in the southbound travel lane along Lee Avenue to conduct loading/unloading of goods. This situation could create potentially hazardous conditions for people bicycling southbound on Lee Avenue as they may have to divert into the adjacent southbound lane to avoid the commercial vehicles stopped and blocking the rightmost southbound travel lane. Based on existing counts and estimated travel demand, under the Developer's Proposed Option there would be 125 and 199 southbound vehicles during the weekday a.m. and p.m. peak hours, respectively. Under the Additional Housing Option there would be 148 and 215 vehicles traveling southbound during the weekday a.m. and p.m. peak hours, respectively. Based on existing counts and estimated travel demand, there could be about 25 bicycles traveling on this segment of Lee Avenue during the weekday p.m. peak hour under both project options.

Additionally, use of the delivery truck access easement to maneuver into the Whole Foods loading dock could also result in secondary effects on people bicycling and public transit delay. Trucks may block Lee Avenue temporarily as they use the delivery truck access easement to maneuver into the loading dock. Trucks accessing the loading dock pull headfirst into the delivery truck access easement and reverse across Lee Avenue to enter the loading dock. Physical constraints, including limited right-of-way and room to maneuver, restrict the ability for large trucks to conveniently complete turning movements. There are no permanent physical features under existing and proposed conditions that prevent or would prevent large vehicles from negotiating the turns or reversing into the loading dock. However, in some cases, the entire street width and delivery truck access easement area may be needed for truck maneuvering. This maneuvering would require trucks to use opposing travel lanes normally used by oncoming traffic and would require flaggers to manage traffic flow on the street and sidewalk. While trucks are reversing out of the delivery truck access easement, the driver's ability to see people walking on the Lee Avenue sidewalks or bicycling along Lee Avenue would be limited.

Based on data collected at the loading dock, a total of nine vehicles were observed to utilize the loading dock over the 17-hour observation period, including six single-unit trucks (about 30 feet long) and three trucks 50 feet long or longer. One truck arrived at the loading dock between 7 and 8 a.m., three trucks arrived between 8 and 9 a.m. (including one longer truck), one truck arrived between 10 and 11 a.m., one truck arrived between 11 a.m. and 12 p.m., and two longer trucks arrived after 7:30 p.m. The single-unit trucks could more easily maneuver into the loading dock and would not be expected to substantially interfere with surrounding traffic. Given the infrequency of large truck maneuvers, the fact that larger vehicles arrived after 7:30 p.m. during off-peak hours when the conflicting volumes of people walking, bicycling, and driving along Lee Avenue are relatively low, the large truck maneuvers are not expected to create a potentially hazardous condition.

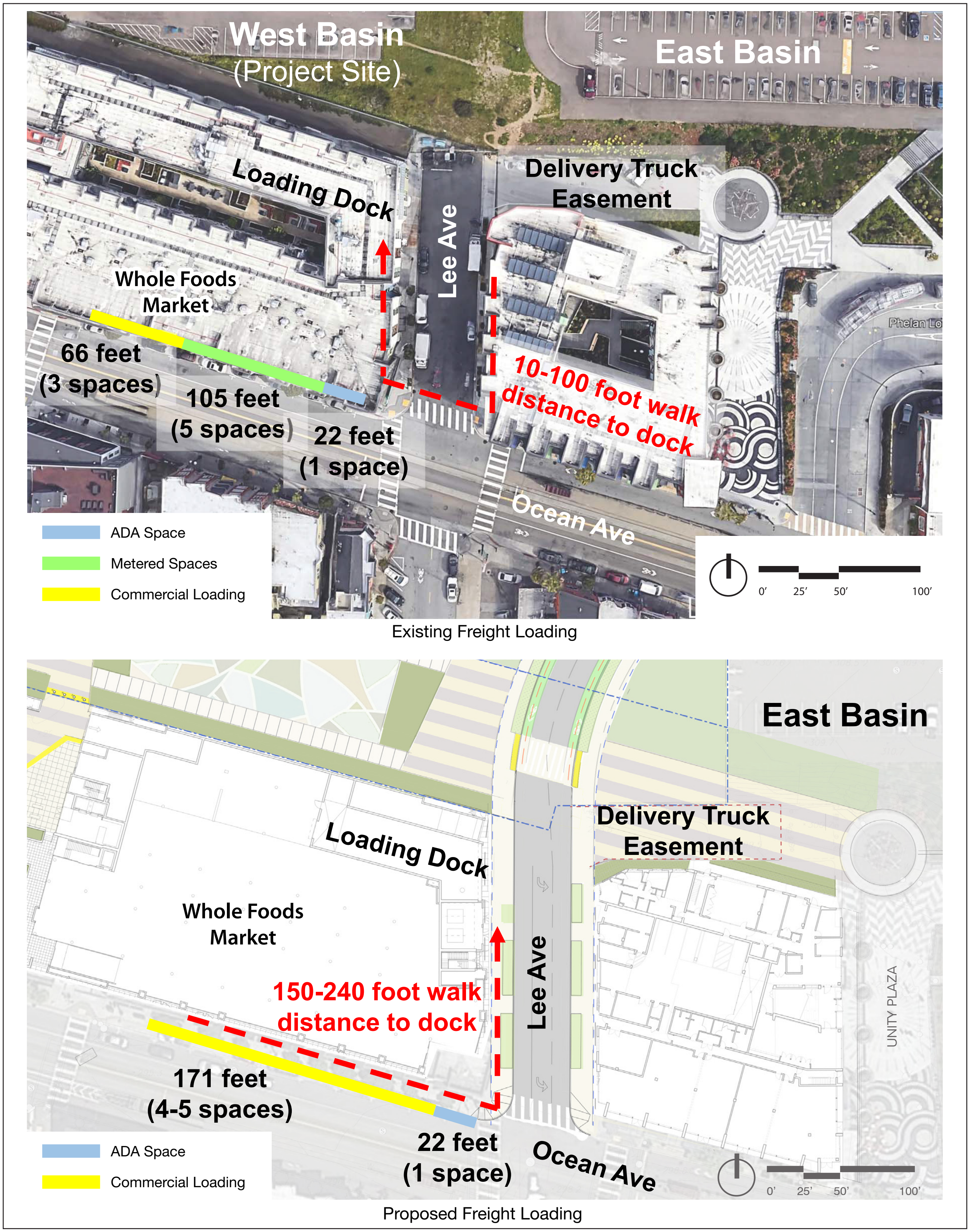
In recognition that the Balboa Reservoir Project would change the conditions of Lee Avenue, the 1150 Ocean Avenue (former Kragen Auto Parts site) property owner is working with Whole Foods to internalize loading demand to the extent possible.[140] In addition, the planning department has the authority to enforce the 1150 Ocean Avenue conditions of approval. With loading management improvements, Whole Foods could internalize and manage some or all of that remaining demand (180 linear feet), but there are no observations or data to demonstrate what demand Whole Foods would be able to fully do so.

Separate from internalizing Whole Foods loading operations, the project sponsor team and City agencies recognize the need to provide Whole Foods with on-street loading space to offset the decrease in on-street loading space on Lee Avenue with implementation of the proposed project options. As a result, the project proposes to convert five metered parking spaces (105 linear feet) to commercial loading along Ocean Avenue between Lee Avenue and Brighton Avenue. There are currently three metered commercial spaces (66 linear feet) on Ocean Avenue immediately east of Brighton Avenue and one accessible parking space (22 linear feet) on Ocean Avenue immediately west of Lee Avenue. These existing spaces would remain. The existing and proposed loading configuration is shown in **Figure 3.B-8, Existing and Proposed Whole Foods Freight Loading**.

Given the existing peak hour Whole Foods demand for approximately 180 linear feet of curbside loading, the proposed project options would meet average demand and result in a deficit of 75 linear feet (two to three spaces) during the peak hour.

However, this new proposed on-street space may not be convenient for all deliveries. Under existing conditions, the distance people need to travel to load/unload goods at Whole Foods is typically between 10 feet and 100 feet. The proposed commercial loading spaces on Ocean Avenue between Lee Avenue and Brighton Avenue are between 150 feet and 240 feet from the Whole Foods loading dock. Given the increased distance from the loading dock, the average duration vehicles stop to load/unload goods would likely increase which may increase the peak hour demand as vehicles turnover less. The increase in distance is not as convenient as the existing condition or being located adjacent to the loading dock. Therefore, some drivers may choose to use the delivery truck access easement or double park on Lee Avenue instead of the proposed commercial loading spaces on Ocean Avenue resulting in the same impacts as described above. It is noted that if Whole Foods can accommodate deliveries from the Ocean Avenue on-street loading spaces through the store's front door instead of the loading dock, this would decrease the potential inconvenience factor. However, Whole Foods staff has indicated that loading activity would continue to be conducted via the loading dock, given that this is the location of delivery driver check-in.[141] It is unknown if Whole Foods could accommodate a change in on-street loading procedures.

[140] AvalonBay Communities, *Loading Conditions of Approval Commitment Letter*, June 20, 2019.
[141] Amanda Leahy, Kittelson Associates, e-mail concerning communication with Whole Foods staff, July 18, 2019.



SOURCE: Kittelson & Associates, Inc.,
Van Meter Williams Pollack LLP, ESA, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 3.B-8
Existing and Proposed Whole Foods Freight Loading

In summary, to the extent that Whole Foods loading demand and demand from other nearby existing uses is not accommodated within the proposed Whole Foods loading dock or within existing or proposed on-street loading spaces nearby and/or to the extent that replacement on-street loading is less convenient or otherwise less desirable, double-parking on Lee Avenue may occur. Such activities could substantially affect transit operations and people bicycling. Further, the above demand discussion is in relation to Whole Foods and does not address the loading demand for other nearby land uses that use the existing Lee Avenue dead-end which also results in similar secondary impacts. Moreover, it is not known and cannot be known at this time how activity on Lee Avenue will occur in the future once the street is changed from a dead-end to a through street. Therefore, for purposes of a conservative assessment, it is judged that the proposed project options would result in a significant impact with respect to loading. A number of mitigation options were explored to avoid, lessen, or reduce this significant impact, including:

- Use of the Whole Foods parking garage. The Whole Foods parking garage has a vertical clearance of 8 feet 2 inches, does not include spaces for delivery/service vehicles, and does not provide adequate vertical circulation (e.g., freight elevators) for internal movement of goods. As a result, based on field observations and communications with Whole Foods,[142] this mitigation option was determined to be infeasible.
- Use of SFPUC property adjacent to 1150 Ocean Avenue. The option to use SFPUC property adjacent to 1150 Ocean Avenue was determined to be infeasible because relocation of the existing ventilation shaft on Brighton Avenue would not provide adequate space for truck circulation.
- Use of the proposed SFPUC Open Space along the west side of the Lee Avenue extension north of 1150 Ocean Avenue. The option to use SFPUC property along the west side of the Lee Avenue extension to provide a commercial loading zone was considered and ultimately rejected given that the loading zone would not be conveniently located and would require delivery vehicles to follow a circuitous and unintuitive route to access the space. Delivery vehicles would need to enter the project site from Frida Kahlo Way, travel west along North Street, and continue south on Lee Avenue extension to access the loading space which would be located on the west (southbound) side of Lee Avenue extension. If the space was occupied, delivery vehicles would either double park or continue south on Lee Avenue to access the Whole Foods off-street loading dock. Given the angle of the loading dock and location of the delivery truck access easement, accessing the loading dock from southbound Lee Avenue would require more complex maneuvering compared to northbound Lee Avenue. Delivery drivers unfamiliar with the appropriate circulation or those that first attempted to access the off-street loading dock may attempt to access the loading zone from northbound Lee Avenue. This would require a multiple point turn and may result in delays to drivers and create hazards for bicyclists traveling north or south on Lee Avenue extension.

Given the foregoing and the associated uncertainty about future loading operations, the impact of the proposed project would be ***significant and unavoidable.***

Mitigation: No feasible mitigation measures identified.

[142] Information provided by Whole Foods 1150 Ocean Avenue Store Manager on April 3, 2019.

Comparison of Impact TR-6b to PEIR Impact Analysis

The PEIR did not assess loading impacts at the program level and did not require any mitigation measures.

The PEIR identified Improvement Measure (Phelan Loop Site Development – Truck Loading) and Improvement Measure (Kragen Auto Parts Site Development – Truck Loading). Improvement Measure (Kragen Auto Parts Site Development – Truck Loading) was modified and converted into a condition of approval regarding loading, imposed in the Planning Commission Motion for the 1150 Ocean Avenue project.[143]

Given the uncertainty about future loading operations and because no feasible mitigation measures were identified, the impact could remain significant and unavoidable. Consequently, the proposed project options could result in a new significant impact that was not previously identified in the PEIR.

2040 Cumulative Conditions

The geographic context for the analysis of cumulative impacts is the transportation study area shown on Figure 3.B-1, p. 3.B-7. This section discusses the cumulative impacts to transportation that could result from the proposed project in combination with cumulative projects. Additional discussion of the land use development and transportation network assumptions is provided in "2040 Cumulative Conditions," p. 3.B-55.

Impact C-TR-1: The proposed project, in combination with reasonably foreseeable future projects, would not result in significant construction-related transportation impacts. (Less than Significant)

Cumulative development projects located within an approximately 0.5-mile radius of the project site are identified in SEIR Section 3.A, Impact Overview, Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11. The construction of the proposed project or project variant may overlap with construction of other cumulative development and transportation infrastructure projects, including new development and/or modernization of existing buildings as part of the City College Facilities Master Plan, I-280 Interchange Modifications, and Ocean Avenue Safety Project.

It is anticipated that construction of the Developer's Proposed Option or Additional Housing Option would occur over a time period of six years and construction of Phase 2 would overlap with occupancy of Phase 1. Construction of the cumulative projects in the vicinity of the project site could generate increased traffic over this six-year period and on the same roads as the Developer's Proposed Option or Additional Housing Option and change areawide circulation patterns. As part of the construction permitting process, development projects would be required to work with the various City departments to develop detailed and coordinated construction logistics and contractor parking plans, as applicable, that would address construction vehicle routing, traffic control, transit movement, pedestrian movement, and bicycle movement adjacent

143 1150 Ocean Avenue, Case No. 2006.0884CEU Motion No. 17885, Hearing date: May 21, 2009.

to the construction area. Although the City College facilities master plan projects would not be required to comply with all of the city's requirements, they would be required to adhere to the blue book regulations addressing transportation-related circulation, access, staging and hours of delivery when working on city streets.

Overall, because the proposed construction activities of the cumulative projects would, to the maximum extent feasible, accommodate construction and staging activities on their respective project sites, and most development projects would also be required to conduct construction in accordance with City requirements, the cumulative projects would result in ***less-than-significant*** cumulative construction-related transportation impacts.

Mitigation: None required.

Comparison of Impact C-TR-1 to PEIR Impact Analysis

The PEIR did not identify any significant cumulative impacts related to construction-related transportation impacts, and the proposed project, in combination with cumulative projects, would not result in significant construction-related transportation impacts. Therefore, the project would result in no new or substantially more severe significant effects than those identified in the PEIR related to construction-related impacts.

Impact C-TR-2: The proposed project, in combination with reasonably foreseeable future projects, would not create potentially hazardous conditions for people walking, bicycling, driving, or public transit operations. (Less than Significant)

Cumulative development projects located within an approximately 0.5-mile radius of the project site are identified in SEIR Section 3.A, Impact Overview, Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11. Under cumulative conditions, traffic from people walking, bicycling, and driving on the surrounding street network would increase as a result of the Developer's Proposed Option or Additional Housing Option, other development projects within the study area, and background growth elsewhere in the city and region. This would generally be expected to lead to an increase in the potential for conflicts between people driving and people walking, bicycling, and public transit operations. However, a general increase in traffic in and of itself would not be considered a potentially hazardous condition.

As with the Developer's Proposed Option or Additional Housing Option, other cumulative development projects would conform to the requirements of the Better Streets Plan, the Transit-First Policy, and the Transportation Demand Management program, as applicable. Furthermore, the effects of increased vehicle traffic would be balanced by cumulative transportation infrastructure projects such as the Ocean Avenue Safety Project and Muni Forward improvements that would include design features that enhance safety, and promote walking, bicycling, and transit use.

Although the City College Facilities Master Plan project would not be required to comply with the City's Better Streets Plan, the Transit-First Policy, or the Transportation Demand Management program, the City College Facilities Master Plan's planning principles encourage the use of various modes of transportation, including BART, Muni, bicycles, and walking and providing convenient connections between transit stops and campus and safe routes for bicycle and pedestrian infrastructure. Additionally, the planning principles identify development of facilities and site improvements that create usable open spaces, universal accessible design standards, and well-integrated design.

For these reasons, the cumulative projects would not generate activities that would create potentially hazardous conditions for people walking, bicycling, driving or public transit operations. Therefore, the cumulative projects would result in a ***less-than-significant*** cumulative impact.

Mitigation: None required.

Comparison of Impact C-TR-2 to PEIR Impact Analysis

Potentially hazardous conditions were not specifically addressed in the PEIR. Therefore, no relevant mitigation measures were identified in the PEIR. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to cumulative potentially hazardous conditions.

Impact C-TR-3: The proposed project, in combination with reasonably foreseeable future projects, would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. (Less than Significant)

Cumulative development projects located within an approximately 0.5-mile radius of the project site are identified in SEIR Section 3.A, Impact Overview, Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11. Under cumulative conditions, vehicle activity on the surrounding street network would likely increase as a result of the Developer's Proposed Option or Additional Housing Option, other development projects within the study area, and background growth elsewhere in the city and region. As with the Developer's Proposed Option or Additional Housing Option, other cumulative development projects would conform to the requirements of the Better Streets Plan, the Transit-First Policy, and the Transportation Demand Management program, as applicable. Furthermore, the effects of increased vehicle traffic would be balanced by cumulative transportation infrastructure projects such as the Ocean Avenue Safety Project and Muni Forward improvements that would include design features that enhance safety, and promote walking, bicycling, and transit use. Although the City College facilities master plan projects would not be required to comply with the City's Better Streets Plan, the Transit-First Policy, or the Transportation Demand Management program, the City College Facilities Master Plan's planning principles encourage the use of various modes of transportation, including BART, Muni, bicycles, and walking and providing convenient connections between transit stops and campus and safe routes for bicycle and pedestrian infrastructure. Additionally, the planning principles identify development of facilities and site improvements that create usable open spaces, universal accessible design standards, and well-integrated design. These planning principles are consistent with established city policies and programs, including the Better Streets Plan, Transit-First Policy, and Transportation Demand Management program.

Overall, cumulative land use development and transportation projects would promote accessibility for people walking to and through the site by conforming to requirements of the Better Streets Plan, Transit-First Policy, and the Transportation Demand Management program, or, in the case of the City College Facilities Master Plan, by adhering to planning principles that emphasize providing convenient connections and safe routes for people walking and bicycling. As a result, the cumulative projects would not generate activities that would interfere with access or circulation for people walking or bicycling.

Although there would be a general increase in vehicle traffic from cumulative development projects, prior to finalizing the design and dimensions of any proposed transportation network changes, fire department and the police department staff would review and approve streetscape modifications, as required, to ensure emergency vehicle access is acceptable. As a result, cumulative development and transportation projects would not inhibit emergency access to the project site or materially affect emergency vehicle response out of the station.

For these reasons, the proposed project, in combination with cumulative projects, would have a ***less-than-significant*** cumulative impact related to accessibility of people walking or biking to and from the site and adjoining areas, and emergency access.

Mitigation: None required.

Comparison of Impact C-TR-3 to PEIR Impact Analysis

Impacts on pedestrians and bicyclists were not identified and emergency access were not specifically addressed in the PEIR, and the proposed project, in combination with cumulative projects, would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to walking/biking, accessibility, and emergency access impacts.

Impact C-TR-4: The proposed project, in combination with reasonably foreseeable future projects, may result in a potentially significant cumulative impact related to public transit delay and the project could contribute considerably. (Significant and Unavoidable with Mitigation)

In the PEIR, under the 2025 with Area Plan scenario, transit delay impacts were identified at Ocean Avenue/Geneva Avenue/Frida Kahlo Way and the new Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp intersections. However, as discussed under Impact TR-4, p. 3.B-73, operation of the proposed project would not substantially delay public transit, and this impact would be less than significant.

The PEIR identified significant impacts to transit delay at the Ocean Avenue/Geneva Avenue/Frida Kahlo Way and new Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp intersections as a result of proposed changes to the intersection configuration, and not to increased vehicle traffic generated by area plan development. The proposed modifications to the Ocean

Avenue/Geneva Avenue/Frida Kahlo Way have been completed and are assumed as part of the existing conditions in this SEIR. The reconfiguration of the Geneva Avenue/I-280 Ramps is anticipated to be completed by 2024 and is assumed as part of cumulative conditions.[144] There is currently no plan to allow direct access to City College parking facilities from the Lee Avenue extension and, therefore, it is not assumed in the analysis in this SEIR. The 1100 Ocean Avenue and 1150 Ocean Avenue sites are included in existing conditions in this SEIR.

As discussed in the approach to cumulative analysis, although City College adopted a facilities master plan in March 2019, this facilities master plan does not provide adequate information to develop a quantitative cumulative impact analysis as part of this Balboa Reservoir SEIR. Therefore, this cumulative analysis is a qualitative analysis that considers the information available about growth and development at City College's Ocean Campus at this point in time.

As discussed in Table 3.B-18, p. 3.B-74, under Impact TR-4, under existing plus project conditions, the increase in transit delay associated with either the Developer's Proposed Option and the Additional Housing Option would not result in significant transit delay impacts. However, the transit delay contribution from City College's Ocean Campus, in combination with the proposed project options, is unknown. For the purposes of a more conservative analysis, the addition of vehicle and transit trips generated by the proposed project options in combination with the City College facilities master plan projects and other cumulative developments is expected to increase transit delay and could exceed the four-minute threshold of significance for individual Muni routes described in the Approach to Impact Analysis Methodology. These Muni routes are served by a substantial number of people and connect this neighborhood with many other San Francisco neighborhoods. The transit delay could make transit less competitive compared to private or for-hire vehicles. As a result, the proposed project options, in combination with cumulative projects, could result in a significant cumulative public transit delay impact given the uncertainty of City College's contribution.

As shown in Table 3.B-18, under existing plus project conditions, vehicle and transit trips generated by the Developer's Proposed Option would increase transit delay by a maximum of 73 seconds along Frida Kahlo Way (southbound direction, weekday p.m. peak hour), a maximum of 100 seconds along Ocean Avenue (westbound direction, weekday p.m. peak hour), and a maximum of 81 seconds along Geneva Avenue (westbound direction, weekday p.m. peak hour). Vehicle and transit generated by the Additional Housing Option would increase transit delay by a maximum of 83 seconds along Frida Kahlo Way, (southbound direction, weekday p.m. peak hour), a maximum of 128 seconds along Ocean Avenue (westbound direction, weekday p.m. peak hour), and a maximum of 91 seconds along Geneva Avenue (westbound direction, weekday p.m. peak hour). Based on a review of the project-related increase in delay under existing plus project conditions and the potential for exponential delay under cumulative conditions[145], the proposed project option's contribution to the K/T Third/Ingleside, 29 Sunset, 43 Masonic, and 49 Van Ness/Mission lines could be cumulatively considerable at greater than two minutes of delay.

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144 SFCTA, I-280 Interchange Modifications at Balboa Park Project website, *https://www.sfcta.org/I-280-interchange-modifications-balboa-park-project*, accessed April 16, 2019.

145 Traffic delay is not linear; it is exponential. That is, in congested conditions, every additional vehicle adds extra delay to any other vehicles behind that additional vehicle. Therefore, project-related increase in delay under cumulative conditions may be greater than the delay presented under existing plus project conditions.

To reduce the project's considerable contribution, implementation of **Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay** was identified. This mitigation measure would require the project sponsor to monitor transit travel times and coordinate with the planning department and SFMTA to implement measures to keep transit travel times within four minutes of existing levels.

Mitigation Measure M-C-TR-4: Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay. The project sponsor, under either project option, shall monitor cumulative transit travel times for the identified route segments of the K/T Third/Ingleside, 29 Sunset, 43 Masonic, and 49 Van Ness/Mission lines to determine if a route does not meet its performance standard. If applicable, the project sponsor shall implement feasible measures (as developed in consultation with SFMTA) to reduce transit delay and meet the transit travel time performance standard.

Transit Travel Time Performance Standard. Existing transit travel times and performance standards for the routes subject to this measure, including study segment and time periods, are shown in Table M-C-TR-4. The routes and study segments shown in Table M-C-TR-4 represent routes and study segments most likely to have a cumulative impact to which the project would have a considerable cumulative contribution.

TABLE M-C-TR-4
TRANSIT TRAVEL TIME PERFORMANCE STANDARD

Transit Line	Study Segment	Existing Transit Travel Time[a]		Performance Standard[b]	
		A.M. Peak Period	P.M. Peak Period	A.M. Peak Period	P.M. Peak Period
K/T	Jules Ave/Ocean Ave to Balboa Park BART	3:30	8:42	7:30	12:42
	San Jose Ave/Geneva Ave to Dorado Terr/ Ocean Ave	3:28	10:03	7:28	11:28
29	Plymouth Ave/Ocean Ave to Mission St/ Persia Ave	8:01	12:09	12:01	16:01
	Mission St/Persia Ave to Plymouth Ave/ Ocean Ave	7:10	9:55	11:10	15:10
43	Frida Kahlo Way/CCSF South Entrance to Foerster St/Monterey Blvd	4:20	4:37	8:20	8:37
	Gennessee St/Monterey Blvd to Frida Kahlo Way/CCSF South Entrance	4:16	4:23	8:16	8:23
49	Frida Kahlo Way/CCSF South Entrance to Mission St/Persia Ave	5:22	10:04	9:22	14:04
	Mission St/Ocean Ave to Frida Kahlo Way/ CCSF South Entrance	7:18	11:25	11:18	15:25

SOURCE: Kittelson & Associates, Inc. 2019; SFMTA Automatic Vehicle Location Data, 2019.

NOTES:

[a] Kittelson staff collected transit travel time data along route segments via onboard surveys. Transit travel times were collected on Tuesday, April 2, 2019, during the weekday a.m. peak period (7 to 9 a.m.) and the weekday p.m. peak period (4 to 6 p.m.). Staff boarded a transit vehicle at the route start point and recorded the travel time between each stop and the dwell time at each stop. Onboard survey data was used to supplement and verify automatic vehicle location data provided by SFMTA. Agencies may determine to update the existing baseline transit travel times closer to commencement of construction.

[b] The performance standard is calculated as the existing transit travel time plus four minutes, or half the headway of a route with headways of less than eight minutes.

Monitoring and Reporting. The project sponsor shall retain a transportation consultant to monitor and report cumulative transit travel times to determine if a route exceeds its performance standard and the project's fair share contribution to such exceedance, if applicable. The transportation consultant shall be on a list of qualified consultants at the SFMTA or San Francisco Planning Department (agencies). The monitoring plan is subject to agencies' review and approval. All reporting documents are also subject to review and approval by the agencies. The agencies may modify the monitoring and reporting program to account for transit route or transportation network changes, or major changes to the project's development program.

Timing. The project sponsor shall retain a transportation consultant within one year of occupancy of one new major building[146] at the City College of San Francisco Ocean Avenue campus (City College) **and** at least 750 units are occupied at the project site.

The transportation consultant shall submit its first transit travel time reporting document to the agencies within 18 months of occupancy of one new major building at the City College San Francisco Ocean Avenue campus (City College) and at least 750 units are occupied at the project site. Thereafter, the transportation consultant shall submit annual reporting documents until the project sponsor meets it terms for this measure.

Collection and Reporting Details. For each reporting document, the transportation consultant shall collect transit travel time data during the a.m. peak (7 to 9 a.m.) and p.m. peak (4 to 6 p.m.) periods during three consecutive, non-holiday weekdays (Tuesday, Wednesday or Thursday) when City College is in typical (i.e., non-finals or spring break week) session. The transportation consultant may use automatic vehicle location on the routes to average the transit travel time data for the peak hour within the peak period of each route in both the inbound and outbound directions along the study segment. Transit travel time surveys shall be conducted within the same month for each reporting period.

For the first reporting document, the transportation consultant shall collect and report additional data during the peak periods to determine the project sponsor's fair-share impacts of the cumulative transit delay. The transportation consultant may use methodologies such as cordons, intersection counts, or video cameras to determine traffic congestion and reentry delay attributable to the project and intercept surveys to determine passenger boarding/alighting delay attributable to the project. Agencies will determine if the collecting and reporting of this subsequent data is required for subsequent reporting documents (e.g., if a route exceeds or is close to exceeding the performance standard in a prior reporting document).

Implement Fair-Share of Measures. If the agencies determine a route does not meet its performance standard and the project contributes greater than or equal to two minutes'

[146] A new major building is City College of San Francisco Ocean Avenue campus construction post-2019 that results in a cumulative net addition of more than 50,000 square feet to an existing building(s) or a new building(s), or a new or expanded parking facility of more than a 50,000 square feet.

delay to that route, the project sponsor shall implement measures that reduce transit travel times. These measures are subject to agency approval and could include:

1. Expansion of measures already included in the project's transportation demand management (TDM) Plan (e.g., increases in tailored transportation marketing services, additional bicycle parking, etc.). The project sponsor shall pay the full cost of implementation.
2. Measures identified in the City's TDM Program Standards Appendix A (as such appendix may be amended by the Planning Department from time to time) that have not yet been included in the project's TDM Plan. The project sponsor shall pay the full cost of implementation.
3. Other measures not included in the City's TDM Program Standards Appendix A that the agencies agree are likely to reduce transit travel times. These other measures may include off-site capital improvements such as, turn pockets, bus bulbs, queue jumps, turn restrictions, boarding islands, and/or transit signal priority projects. The project sponsor shall pay their fair share, calculated as the project's percent contribution to the increase in transit travel time between baseline and cumulative conditions, of the selected measures.

Term Condition A: The project sponsor shall monitor, submit reporting documents, and implement their fair share portion of measures for each route until the agencies determine that three consecutive reporting documents demonstrate: (1) the route does not exceed its performance standard or (2) the project does not contribute greater than or equal to two minutes' delay to a route that exceeds its performance standard.

Term Condition B: The project sponsor shall be subject to the term condition A for every new major building at City College or for every additional 250 occupied dwelling units at the project site. The agencies may waive term Condition B if past reporting documents demonstrate the project has no potential to contribute to greater than or equal to two minutes' delay to a route that exceeds or may exceed its performance standard.

In consideration of the uncertainty surrounding the development at City College's Ocean Campus, the uncertainty of the Balboa Reservoir Project's TDM measure effectiveness, and the uncertainty of SFMTA approval of other measures under their jurisdiction, the impact of the proposed project options would remain ***significant and unavoidable with mitigation,*** even with implementation of Mitigation Measure M-C-TR-4**.**

Significance after Mitigation: Significant and Unavoidable.

Comparison of Impact C-TR-4 to PEIR Impact Analysis

The PEIR identified a significant impact related to transit ridership and capacity on the K Ingleside line. No feasible mitigation measure was identified and the impact was determined to be significant and unavoidable. Since the PEIR's certification in December 2008, the planning department modified significance criteria related to transit impacts, and transit capacity utilization is no longer a consideration for determining significant impacts. This topic is no longer considered under the CEQA framework, as discussed in the *Transportation Impact Analysis Guidelines Update: Summary of*

Changes Memorandum[147] and the *Transportation Impact Analysis Guidelines for Environmental Review – Update, Public Transit Memo and Appendices*, February 2019.[148]

The PEIR identified transit delay impacts at Ocean Avenue/Geneva Avenue/Frida Kahlo Way and the new Geneva Avenue/I-280 NB Off-Ramp and Geneva Avenue/I-280 SB On-Ramp intersections under 2025 with Area Plan scenario and at Lee Avenue/Ocean Avenue under the Lee Avenue Connection to City College – 2025 with Area Plan scenario. No feasible mitigation measures were identified in the PEIR that would reduce these impacts to a less-than-significant level. Therefore, these were identified as significant, unavoidable impacts. As discussed under Impact C-TR-4 above, the proposed project would not have any new effects than those identified in the PEIR related to transit impacts.

Impact C-TR-5: The proposed project, in combination with reasonably foreseeable future projects, would not cause substantial additional VMT or substantially induce automobile travel. (Less than Significant)

As stated in the approach to analysis, VMT by its very nature is largely a cumulative impact. As discussed under Impact TR-5, p. 3.B-79, the project would not exceed the project-level quantitative thresholds of significance for VMT. In addition, Plan Bay Area meets greenhouse gas reduction targets set by the California Air Resources Board. Furthermore, as shown in **Table 3.B-19, 2040 Daily Vehicle Miles Traveled**, projected 2040 average daily VMT per capita for the TAZ the project site is located in (i.e., TAZ 915) is below the project 2040 regional average daily VMT:

- For the residential uses, the projected 2040 average household daily VMT per capita is 10.8, which is about 21 percent below the projected 2040 regional average household daily VMT per capita of 16.1.
- For the childcare use, the projected 2040 average household daily office VMT per employee is 12.6, which is about 26 percent below the projected 2040 regional average daily office VMT per employee of 17.1.
- For the retail uses, the projected 2040 daily VMT per retail employee is 2.2, which is about 82 percent below the projected 2040 regional average daily retail VMT per employee of 14.6.[149,150]

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147 San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update: Summary of Changes*, February 2019, *http://default.sfplanning.org/publications_reports/TIA_Guidelines_Summary_of_Changes_Memo.pdf*, accessed April 16, 2019.

148 San Francisco Planning Department, *Transportation Impact Analysis Guidelines for Environmental Review – Update, Public Transit Memo and Appendices*, February 2019, *http://default.sfplanning.org/publications_reports/TIA_Guidelines_Transit_Memo.pdf*, accessed February 14, 2019.

149 Ibid, footnote 4.

150 San Francisco Planning Department, *Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis for Balboa Reservoir Project*, November 15, 2018.

TABLE 3.B-19
2040 DAILY VEHICLE MILES TRAVELED

Land Use	Bay Area Regional Average	Project TAZ (TAZ 915)
Residential (per capita)	16.1	10.8
Childcare (per employee)	17.1	12.6
Retail (per employee)	14.6	2.2

SOURCE: San Francisco Planning Department, Transportation Information Map. *http://sfplanninggis.org/TIM/*.
NOTE:
Childcare is treated as office for purposes of screening and analysis.

Therefore, no significant cumulative VMT impacts would occur.

Mitigation: None required.

Comparison of Impact C-TR-5 to PEIR Impact Analysis

The San Francisco Planning Commission replaced automobile delay (vehicle level of service) with the VMT significance criteria (resolution 19579) in March 2016. As a result, the PEIR did not analyze VMT or induced automobile travel. The PEIR and identify any significant impacts related to VMT or induced automobile travel impacts and did not require any mitigation measures, and the proposed project, in combination with cumulative projects, would not cause substantial additional VMT or substantially induce automobile travel. Therefore, the proposed project would not have any new or substantially more severe effects than those identified in the PEIR related to VMT and induced automobile travel impacts.

The cumulative loading impact analysis is broken out into two different impact statements. The first impact statement, Impact C-TR-6a, reflects the analysis of project's on-site loading activities. The second impact statement, Impact C-TR-6b, reflects the project's impacts on off-site loading activities, specifically on Lee Avenue between Ocean Avenue and the project site.

Impact C-TR-6a: The proposed project, in combination with reasonably foreseeable future projects, would not create hazardous conditions or significant delay affecting transit, other vehicles, bicycles, or people walking (Less than Significant).

Cumulative development projects located within an approximately 0.5-mile radius of the project site are identified in SEIR Section 3.A, Impact Overview, Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11. Under cumulative conditions, freight and passenger loading activity on the surrounding street network would increase as a result of development projects within the study area. However, freight and passenger loading demand generated by cumulative development projects would not be anticipated to use freight and passenger loading spaces within the project site. As discussed under Impact TR-6a, p. 3.B-100, the proposed project options would provide sufficient freight and passenger loading spaces to meet expected project-generated demand and given the anticipated location of freight loading zones and the ability of the internal roadways to accommodate any queueing or double-parked vehicles, as well as the distance from the external street network, the proposed project options would not cause secondary effects outside of the project site. Therefore, the proposed project, in combination with cumulative projects, would have ***less-than-significant*** cumulative impacts related to loading within the project site.

Mitigation: None required.

Comparison of Impact C-TR-6a to PEIR Impact Analysis

The PEIR did not assess loading impacts at the program level, and did not require any mitigation measures. The project would result in a less-than-significant impact related to freight and passenger loading within the project site, and no mitigation measures are required. Both the Developer's Option and the Additional Housing Option would not have any new or substantially more severe effects than those identified in the PEIR.

Impact C-TR-6b: Operation of the proposed project, including proposed street network changes, in combination with reasonably foreseeable future projects, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. (Significant and Unavoidable)

Cumulative development projects located within an approximately 0.5-mile radius of the project site are identified in SEIR Section 3.A, Impact Overview, Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11. Under cumulative conditions, freight and passenger loading activity on the surrounding street network would increase as a result of development projects within the study area.

As discussed in the Existing Conditions section on Freight Loading, SEIR p. 3.B-27, there were 76 total loading events observed either on Lee Avenue, within the Whole Foods loading dock, and within the delivery truck access easement over a 17-hour time period between 5 a.m. and 10 p.m. on Tuesday March 26, 2019, when City College was in session. Under existing conditions, Lee Avenue is a dead-end street, with no through traffic; "No Parking" signs are posted on both sides of Lee Avenue. In its current condition, Lee Avenue essentially functions as a loading zone that provides convenient on-street loading supply to meet Whole Foods' loading demand and accommodate deliveries and passenger loading activity related to other nearby businesses along Ocean Avenue. However, the proposed project would extend Lee Avenue into the project site, altering Lee Avenue's current status as a dead-end street and de facto loading area for passenger pickup and drop-off and freight deliveries. This reconfiguration of Lee Avenue would reduce the supply of on-street loading available to Whole Foods and nearby land uses. The project also proposes to convert five metered parking spaces (105 linear feet) to commercial loading along Ocean Avenue between Lee and Brighton avenues. However, given the existing peak hour Whole Foods demand for approximately 180 linear feet of curbside loading, the proposed project options would meet average demand and result in a deficit of 75 linear feet (two to three spaces) during the peak hour.

Given the likelihood that vehicle traffic and freight and passenger loading activity would increase on the surrounding roadway network and along Lee Avenue as a result of cumulative development projects within the study area, conditions are likely to worsen. To the extent that freight and passenger loading demand could not be conveniently accommodated within available loading spaces, double-parking is likely to occur. Such activities could result in secondary effects on people bicycling and public transit delay. Therefore, cumulative loading impacts would be significant. Given the uncertainty regarding the ability of the future loading demand to be accommodated, the proposed project, in combination with cumulative projects, would have ***significant-and-unavoidable*** cumulative impacts related to loading.

Mitigation: No feasible mitigation measures identified.

Comparison of Impact C-TR-6b to PEIR Impact Analysis

The PEIR did not assess loading impacts at the program level, and did not require any mitigation measures. Given the uncertainty regarding the ability of the loading supply to meet demand, the impact would be significant and unavoidable. Consequently, both the Developer's Option and the Additional Housing Option would result in a new significant impact that was not previously identified in the PEIR.

3.C Noise

3.C.1 Introduction

This section describes the existing noise environment in the project area, evaluates the potential construction-related and operational noise and vibration impacts associated with implementation of the proposed project, and identifies mitigation measures to avoid or reduce potential adverse impacts. Project-related noise and vibration effects on biological resources are discussed in supplemental environmental impact report (SEIR) Appendix B, Initial Study, Section E.14, Biological Resources.

3.C.2 Summary of Comments Received in Response to the Notice of Preparation

Comments raised concerns about the exposure of students at Archbishop Riordan High School and City College to construction noise and requested that the analysis address ways to minimize construction noise impacts. Members of the public also raised general concerns regarding increased noise levels associated with the intensified use of the site. These issues are discussed under Impact NO-1, p. 3.C-23. Comments also expressed concern over cumulative noise impacts, in particular with future City College projects. Cumulative noise impacts are discussed in Impact C-NO-1, p. 3.C-38.

3.C.3 Summary of Balboa Park Station Area Plan PEIR Noise Section

Balboa Park Station Area Plan PEIR Setting

The noise setting for the Balboa Park Station Area Plan (area plan) discussed in the Balboa Park Station Area Plan [Program] Environmental Impact Report (PEIR) differs from the existing setting today primarily in terms of the increase in traffic volumes resulting from overall employment growth in the San Francisco area and number of noise sources that exist in the area. However, there was a decrease in annual enrollment at the adjacent City College Ocean Campus of nearly 25 percent between 2008–2009 and 2017–2018, the most recent year for which data are available.[151] In addition, since the December 2008 certification of the PEIR, development has occurred adjacent to the project site. City College filled the east basin of the reservoir site and raised its grade to match surrounding terrain to the east, and constructed the Multi-Use Building.

[151] California Community Colleges Chancellor's Office Data Mart, *https://datamart.cccco.edu/Students/Student_Term_Annual_Count.aspx*, accessed April 17, 2019. It is noted that enrollment rose by 18 percent from 2016-17 to 2017-18. The increase coincided with both the resolution of the college's dispute with the Accrediting Commission for Community and Junior Colleges over the school's accreditation and with the institution of free tuition for city residents.

Another aspect of the noise setting that has changed since the December 2008 certification of the PEIR is the number of noise-sensitive uses that now exist in the area. To the south, the 1100 and 1150 Ocean Avenue development projects were constructed with residential above ground-floor retail uses under the area plan. There have been no significant changes to the regulatory environment with regard to noise since certification of the PEIR.

Balboa Park Station Area Plan PEIR Impacts and Mitigation Measures

The analysis in PEIR Section IV.D, Noise, and PEIR initial study Section E.5, Noise, included all areas to be developed in the plan area, of which the project site was not examined at a project level of detail. Adjacent development sites to the south of the project site (the Phelan Loop Site (now 1100 Ocean Avenue) and the Kragen Auto Parts Site (now 1150 Ocean Avenue)) were assessed at a project level of detail. The construction noise impact was identified as less than significant in PEIR initial study Section E.5, Noise. The PEIR initial study determined that compliance with the San Francisco Noise Ordinance, which is required by law, would reduce construction noise impacts to a less-than-significant level. Construction-related vibration impacts were not addressed in the PEIR.

While potential operational vibration impacts were identified in the PEIR for portions of the plan area due to proximity to the San Francisco Municipal Railway (Muni) rail tracks, these impacts were identified as less than significant for the Balboa Reservoir Subarea due to the distance of the subarea from these sources. In the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015,[152] the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might affect a project's users or residents, except where the proposed project would exacerbate the existing environmental condition. Accordingly, the identified significance criteria related to exposure of people, including sensitive receptors, to excessive noise levels or vibration are valid only to the extent that the Project significantly contributes to those worsened noise conditions. The analysis in this section with respect to noise exposure of future project occupants, therefore, is provided for informational purposes.

Traffic noise increases were identified as less than significant in the PEIR and no mitigation measures were required. Noise compatibility impacts were identified as significant for many subareas including the Balboa Reservoir Subarea. These impacts were identified due to elevated noise levels approaching land use compatibility criteria of the City's general plan. PEIR Mitigation Measure N-1 was identified to require detailed evaluation of noise reduction requirements and needed noise reduction to be incorporated into the design before new residential construction proceeds.

[152] *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369. Opinion Filed December 17, 2015.

3.C.4 Environmental Setting

Sound Fundamentals

Sound is characterized by parameters that describe the rate of *oscillation* (frequency) of sound waves, the distance between successive troughs or crests in waves, the speed that they travel, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize how loud a sound is, and the decibel (dB) scale is used to quantify sound intensity. Because the human ear is not equally sensitive to all sound frequencies, 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 reflects the different frequencies that humans can hear. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Except in carefully controlled laboratory experiments, a change of only 1 dBA in sound level cannot be perceived. Outside of the laboratory, a 3 dBA change is considered a perceptible difference while a 5 dBA change is considered readily noticeable. A 10 dBA increase in the level of a continuous noise represents a perceived doubling of loudness.[153]

Noise Descriptors

Noise is generally defined as sound that is loud, disagreeable, unexpected or unwanted. Variations in noise exposure over time are typically expressed in terms of a steady-state energy level (called Leq) that represents the acoustical energy of a given measurement, or alternatively as a statistical description of what sound level is exceeded over some fraction (10, 50, or 90 percent) of a given observation period (i.e., L10, L50, L90). Leq (24) is the steady-state acoustical energy level measured over a 24-hour period. Lmax is the maximum, instantaneous noise level registered during a measurement period. Because people in residential areas are more sensitive to unwanted noise intrusion during the evening and at night, an artificial 5 dBA increment is added to evening noise levels (7 to 10 p.m.) and an artificial 10 dBA increment is added nighttime noise levels (10 p.m. to 7 a.m.) to form a 24-hour noise descriptor called the *Community Noise Equivalent Level* (CNEL). Another 24-hour noise descriptor, called the *day-night noise level* (Ldn), is similar to CNEL, but Ldn does not add the evening 5 dBA penalty between 7 p.m. and 10 p.m. In practice, Ldn and CNEL usually differ by less than 1 dBA at any given location from transportation noise sources.[154] **Table 3.C-1, Representative Environmental Noise Levels**, presents representative noise sources and their corresponding noise levels in dBA at varying distances from the noise sources.

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153 California Department of Transportation (Caltrans), *Technical Noise Supplement (TeNS) to the Traffic Noise Analysis Protocol* pp. 2-44 to 2-45, September 2013, *http://www.dot.ca.gov/env/noise/docs/tens-sep2013.pdf*, accessed January 22, 2019.

154 Caltrans, *Technical Noise Supplement (TeNS) to the Traffic Noise Analysis Protocol*, September 2013, p. 2-48, *http://www.dot.ca.gov/env/noise/docs/tens-sep2013.pdf,* accessed January 22, 2019.

TABLE 3.C-1
REPRESENTATIVE ENVIRONMENTAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 100 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck going 50 mph at 50 feet		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area during daytime		
Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban area during daytime	50	Dishwasher in next room
Quiet urban area during nighttime	40	Theater, large conference room (background)
Quiet suburban area during nighttime		
	30	Library
Quiet rural area during nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

SOURCE: California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, p. 2-20.

Sensitive Receptors

Some land uses (and associated users) are considered more sensitive to ambient noise levels than others due to the types of activities typically involved with the land use and the amount of noise exposure (in terms of both exposure duration and insulation from noise). In general, occupants of residences, schools, daycare centers, hotels, hospitals, places of worship, and nursing homes are considered to be sensitive receptors (i.e., persons who are sensitive to noise based on their specific activities, age, health, etc.).

Health Effects of Environmental Noise

The World Health Organization is a recognized source of current knowledge regarding health impacts, including those generated by noise. According to the World Health Organization, one health effect is sleep disturbance, which can occur when continuous indoor noise levels exceed 30 dBA (Leq) or when intermittent interior noise levels reach or exceed 45 dBA (Lmax), particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the World Health Organization criteria suggest that acceptable nighttime ambient noise levels should be 45 dBA (Leq) or below, and short-term events should not generate noise in excess of 60 dBA (Lmax). The World Health Organization also notes that maintaining noise levels within the recommended levels during the first part of the night helps people to fall asleep.[155]

Other potential health effects of noise identified by the World Health Organization include decreased performance on complex cognitive tasks, such as reading, attention, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, or shorter-term exposure to very high noise levels, for example, exposure several times a year to a concert with noise levels at 100 dBA). Noise can also disrupt speech intelligibility at relatively low levels; for example, in a classroom setting, a noise level as low as 35 dBA can disrupt clear understanding. Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. The World Health Organization reports that during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed by activities with noise levels below 50 dBA.

Vehicle traffic and continuous sources of machinery and mechanical noise contribute to unhealthy ambient noise levels. Short-term noise sources, such as large vehicle audible warnings, the crashing of material being loaded or unloaded, car doors slamming, and engines revving, contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and annoyance. The effect of noise on receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels at night can disturb sleep.

Vibration and Groundborne Noise

Groundborne noise refers to noise generated by vibrations from outside a structure but experienced inside the structure. Groundborne noise can be a problem in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing near homes or other noise-sensitive structures. Vibration is an oscillatory motion through a solid medium. Typically, groundborne vibrations generated by man-made activities attenuate rapidly with the distance from the source of the vibration. Vibration is typically measured by peak particle velocity (PPV) in inches per second (in/sec). With the exception of 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. High levels of vibration can damage fragile buildings or interfere with sensitive equipment. Depending on the age of the structure and type of vibration

[155] World Health Organization, *Guidelines for Community Noise*, April 1999, Chapter 3, p. 46.

(transient, continuous, or frequent intermittent sources), vibration levels as low as 0.5 to 2.0 in/sec PPV can damage a structure.[156]

Typical sources of groundborne vibration in San Francisco are large-scale construction projects that involve pile driving, vibratory construction equipment, or underground tunneling. Vibration is also caused by transit vehicles in the subway system, including Muni light-rail vehicles, historic streetcars, and Bay Area Rapid Transit (BART) trains. In general, such vibration is only an issue when there are sensitive receptors located nearby. Since rubber tires and suspension systems mitigate vibrations, rubber tire vehicles such as Muni buses, trucks, and automobiles rarely create substantial vibration absent a bump in the road surface.[157]

Existing Conditions

Existing Noise Sources

At present, the primary source of noise on the project site is vehicle traffic on Ocean Avenue and within the City College Campus. The I-280 freeway is approximately 1,800 feet to the east, and its distance and below-grade location render noise from the freeway largely inaudible except during the quietest periods. The primary source of noise adjacent to or near the project site is traffic within City College roadways and parking areas in the east basin. Noise sources to the south, along Ocean Avenue, include buses at City College Terminal, occasional emergency sirens of San Francisco Fire Station 15, and ingress and egress of vehicles at the Whole Foods Market, reflecting the urban character of the neighborhood. Light-rail train operations (K Ingleside line, approximately 230 feet south of the project site) operates at the surface and generates some airborne noise in its immediate vicinity.

Existing Groundborne Noise and Vibration Sources

There are no known sources of existing groundborne noise or vibration near the project site. Light rail train operations (K Ingleside line, approximately 230 feet south of the project site) operates at the surface and generates some surface vibration in its immediate vicinity. Given its distance and surface location, the K Ingleside line is not considered a substantial source of groundborne noise or vibration at the project site.[158] There is no machinery or activity at the adjacent commercial, scholastic, and residential uses that generate vibration on the project site.

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156 Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013, Table 9, p. 23, *http://www.dot.ca.gov/env/noise/docs/tens-sep2013.pdf*, accessed January 22, 2019.

157 U.S. Department of Transportation (U.S. DOT), Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment Manual*, September 2018, p. 116, *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 January 22, 2019.

158 U.S. DOT, FTA, *Transit Noise and Vibration Impact Assessment Manual*, September 2018, Section 4.3, Noise Screening Procedure, pp. 33–36 (noise 175 feet with intervening buildings) and 136 (vibration 150 feet for residential), *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 January 22, 2019.

Ambient Noise Measurements

To characterize the background noise environment in the project vicinity, a total of seven noise measurements were collected. Three long-term (24 hours) and four short-term (15 minutes) measurements were collected in the project area in December 2018 and January 2019.[159] All measurements were collected during normal class schedule at City College to characterize the noise environment at the project site during that period. Measurement locations are indicated on **Figure 3.C-1, Noise Measurement Locations**. Noise measurement data are included in SEIR Appendix D, Noise Supporting Information. A summary of noise measurement results is presented in **Table 3.C-2, Summary of Long-Term (LT) and Short-Term (ST) Noise Monitoring on the Project Site and Vicinity (dBA)**. As indicated in Table 3.C-2, noise measurements indicate that noise levels at the project site range from 58 to 59 dBA [Ldn].[160]

Existing and Future/Planned Sensitive Receptors

There are commercial, civic, school, and residential uses within 900 feet of the project site.[161] Existing noise-sensitive receptors in the project vicinity within 900 feet of the project site are composed of residences, five daycare centers, and one high school, as listed below in **Table 3.C-3, Existing Noise-Sensitive Receptors within 900 Feet of the Project Site**, and their locations are shown in **Figure 3.C-2, Existing Noise-Sensitive Receptors within 900 Feet of Project Site**. There are no existing hospitals or skilled nursing facilities within 900 feet of the project site. However, the project proposes an onsite childcare facility in Block B.

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159 Short-term measurements were taken with a Larson Davis LxT sound level meter on Wednesday, January 23, 2019, while the long-term measurements were taken from Wednesday December 6, 2018, and on Tuesday January 22, 2019, with Metrosonics Model db 308 and Larson Davis LxT sound level meters. Measurement locations were selected based on the locations of major noise sources and proposed development locations as well as to characterize noise attenuation effects over the project site.

160 The PEIR found a 24-hour on-site noise level of 61 dBA (CNEL) at a location generally comparable to measurement location LT-1, where the noise level was 58 dBA (Ldn), although the PEIR measurement was closer to the active parking areas than LT-1. Inasmuch as the CNEL noise level adds an additional 5 dBA artificial penalty for evening noise, the marginal difference in results is to be expected.

161 This distance was selected because typical construction noise levels attenuate to approximately 55 dBA at a distance of 900 feet if there is a direct line-of-sight between a noise source and a noise receptor (i.e., two pieces of equipment generating 85 dBA would attenuate to 55 dBA over a distance of 900 feet). An exterior noise level of 60 dBA will typically attenuate to an interior noise level of 35 dBA with the windows closed and 45 dBA with the windows open.

SOURCE: Google Earth, 2018; ESA, 2019

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Figure 3.C-1
Noise Measurement Locations

TABLE 3.C-2
SUMMARY OF LONG-TERM (LT) AND SHORT-TERM (ST) NOISE MONITORING ON THE PROJECT SITE AND VICINITY (dBA)

Measurement Location		Time Period	Average Ldn or Leq	Audible Noise Sources
Long-Term Measurements (24 hours or more)				
LT-1	Northwest corner of project site. Location LT-1 represents the area of the project site furthest from Ocean Avenue. It also represents the noise environment of the nearest residential receptors on Plymouth Avenue.	12/5/18 to 12/7/18 Daytime: Evening: Nighttime: 24-hour Ldn: 24-hour L90:	 54 dBA (Leq) 53 dBA (Leq) 51 dBA (Leq) 58 dBA (Ldn) 46 dBA (L90)	Vehicle traffic accessing City College parking areas, both on the project site and at the east basin.
LT-2	Southwest corner of the project site. Location LT-2 represents the area of the project site closest to Ocean Avenue. It also represents the noise environment of the nearest multifamily residential receptors on 1150 Ocean Avenue development to the south of the site.	1/22/19 to 1/23/19 Daytime: Evening: Nighttime: 24-hour Ldn: 24-hour L90:	 53 dBA (Leq) 51 dBA (Leq) 52 dBA (Leq) 59 dBA (Ldn) 40 dBA (L90)	Vehicle traffic on Ocean Avenue
LT-3	Plymouth Avenue between Greenwood Avenue and Montecito Avenue. Location LT-3 represents the northern portion of the Westwood Park residences and traffic conditions on Plymouth Avenue.	1/9/18 to 1/10/18 Daytime: Evening: Nighttime: 24-hour: 24-hour L90:	 58 dBA (Leq) 58 dBA (Leq) 53 dBA (Leq) 61 dBA (Ldn) 39 dBA (L90)	Vehicle traffic on Plymouth Avenue
Short-Term Measurements (15 minutes)				
ST-1	South border of Archbishop Riordan High School. This location was selected because high school classrooms are a noise-sensitive land use.	1/23/19; 9:11 to 9:26 a.m.	57 dBA (Leq)	Vehicle traffic accessing City College parking areas on the project site and at the east basin
ST-2	Lee Avenue Access Point. Lee Avenue would be a primary access point for by vehicles for site access. Additionally, the adjacent 1100 and 1150 Ocean Avenue developments represent a sensitive receptor. This location is also a delivery and an egress point for Whole Foods Market.	1/23/19; 9:33 to 9:48 a.m.	61 dBA (Leq)	Vehicle traffic exiting Whole Foods Market, delivery trucks, and traffic and Muni K-line on Ocean Avenue
ST-3	City College Multi-Use Building. The Multi-Use Building is the nearest City College building to the project site; however, college campuses are generally not considered a noise-sensitive receptor.	1/23/19; 8:50 to 9:05 a.m.	55 dBA (Leq)	Vehicle traffic accessing City College parking areas on the project site and at the east basin
ST-4	Terminus of San Ramon Way. This is a mid-point location of sensitive receptors along the western project boundary and represents the existing traffic noise conditions on Plymouth Avenue nearest to Ocean Avenue.	1/23/19; 8:27 to 8:42 a.m.	60 dBA (Leq)	Vehicle traffic on Plymouth Avenue

SOURCE: ESA, 2018 and 2019.

TABLE 3.C-3
EXISTING NOISE-SENSITIVE RECEPTORS WITHIN 900 FEET OF THE PROJECT SITE

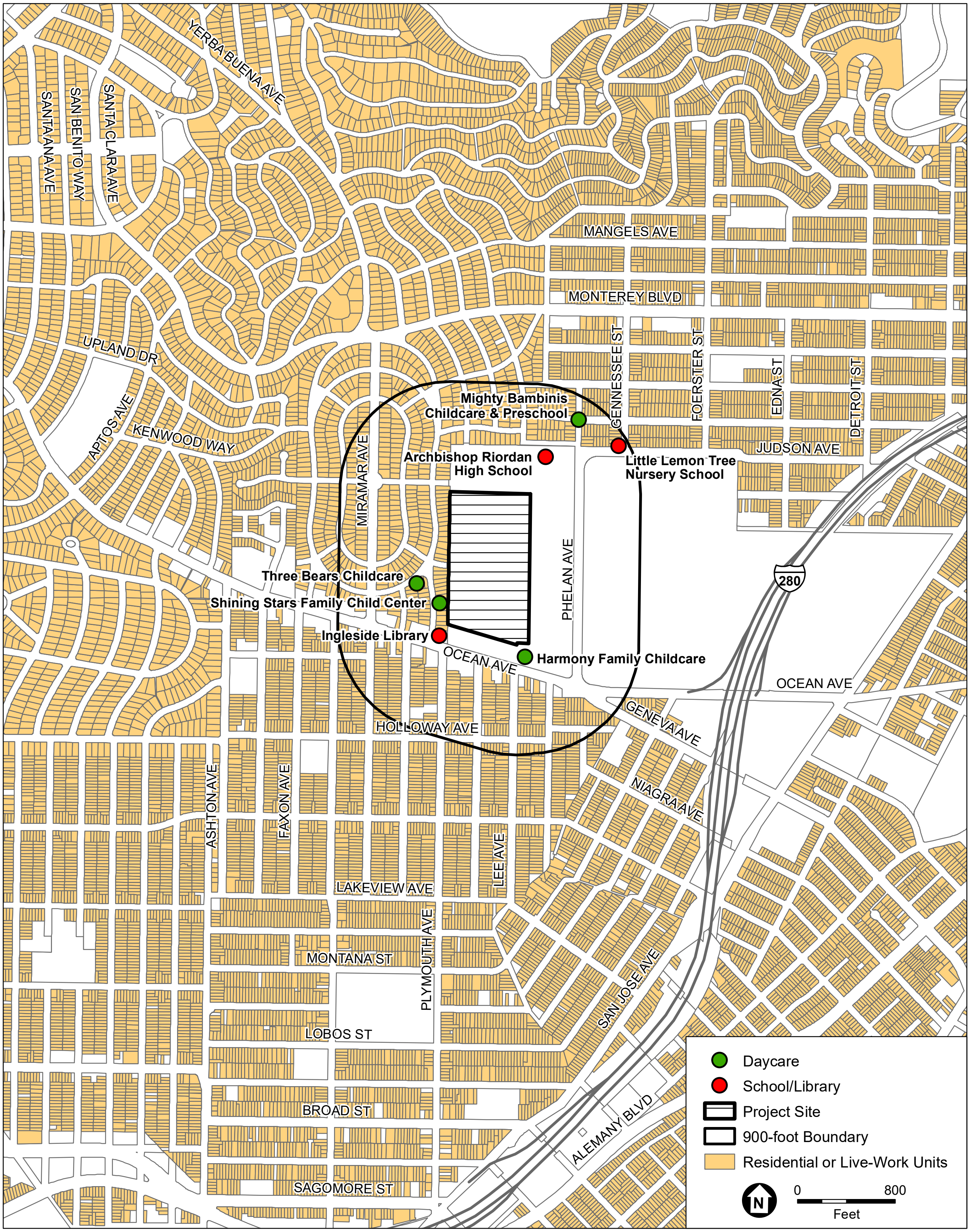
Type of Sensitive Receptor	Location	Minimum Distance from Project Site Boundaries	Representative Monitoring Location
West of Project Site			
Residential	Westwood Park Neighborhood	50 feet[a]	LT-2 and ST-4
Shining Star Family Child Center	1242 Plymouth Avenue	50 feet	LT-2
Three Bears Child Care	19 Southwood Drive	240 feet	St-4
East of Project Site			
Day Care	City College Bungalows B212 and B213	850 feet	ST-1
South of the Project Site			
Residential, Harmony Family Childcare	1100–1150 Ocean Avenue	80 feet	ST-2
Residential	South of Ocean Avenue	420 feet	ST-2
Library	1298 Ocean Avenue	130 feet	ST-2
North of the Project Site			
School/Residential	Archbishop Riordan High School South Wing[b]	75 feet	ST-1
Mighty Bambinis Childcare/Preschool	Phelan Avenue at Staples Avenue	560 feet	ST-1

SOURCE: ESA, 2019; Google Earth (Imagery Date 9/11/2017) for parcel data (address and distance to the site).

NOTES:

a Minimum distance is estimated at 50 feet because project setbacks have not yet been determined. Numbers correspond to locations shown on Figure 3.C-2, p. 3.C-11.

b The boarding students at the school site are conservatively considered to be located at this receptor point.



SOURCE: San Francisco Planning Department, 2018; ESA, 2018

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Figure 3.C-2
Existing Noise-Sensitive Receptors within 900 Feet of Project Site

3.C.5 Regulatory Framework

Federal Regulations

In 1972, the Noise Control Act (42 United States Code section 4901 et seq.) was passed by congress to promote limited noise environments in support of public health and welfare. It also established the U.S. Environmental Protection Agency (U.S. EPA) Office of Noise Abatement and Control to coordinate federal noise control activities. U.S. EPA established guidelines for noise levels that would be considered safe for community exposure without the risk of adverse health or welfare effects. **Table 3.C-4, Summary of Noise Levels Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety**.

TABLE 3.C-4
SUMMARY OF NOISE LEVELS REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY

Effect	Level	Area
Hearing loss	< 70 dBA[a] (Leq, 24 hour)	All areas
Outdoor activity interference and annoyance	< 55 dBA (Ldn)	Outdoor residential areas and farms as well as other outdoor areas where people spend varying amounts of time and places where quiet is a basis for use
Outdoor activity interference and annoyance	< 55 dBA (Leq, 24 hour)	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	< 45 dBA (Ldn)	Indoor residential areas
Indoor activity interference and annoyance	< 45 dBA (Leq, 24 hour)	Other indoor areas with human activities, such as schools, etc.

SOURCE: U.S. EPA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974, *http://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.pdf*, accessed January 23, 2019.

NOTE:

a Yearly average equivalent sound levels in decibels; the exposure period that results in hearing loss at the identified level is 40 years.

U.S. EPA found that to prevent hearing loss over the lifetime of a receptor, the yearly average Leq should not exceed 70 dBA, and the Ldn should not exceed 55 dBA in outdoor activity areas or 45 dBA indoors to prevent interference and annoyance.[162] In 1982, noise control was largely passed to state and local governments.

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under Code of Federal Regulations title 40, part 205, subpart B. The federal truck pass-by noise standard is 80 dBA at 50 feet from the vehicle pathway centerline, under specified test procedures. These requirements are implemented through regulatory controls on truck manufacturers. There are no comparable standards for vibration, which tend to be specific to the roadway surface, the vehicle load, and other factors.

162 U.S. Environmental Protection Agency (U.S. EPA), *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

While the Transit Noise and Vibration Impact Assessment of the Federal Transit Administration (FTA) is developed for determining significant noise and vibration impacts for transit projects and is not a regulation, it is one of the few federal sources that suggest both a methodology and criteria for assessing construction noise impacts. The FTA noise impact criteria used to assess construction impacts are identified in **Table 3.C-5, Construction Noise Impact Criteria**. These criteria are absolute contribution values from construction activity, and are independent of existing background noise levels. If the FTA criteria (presented in Table 3.C-5) are exceeded, adverse noise impacts could occur.

TABLE 3.C-5
CONSTRUCTION NOISE IMPACT CRITERIA

Land Use	Maximum 1-Hour dBA Leq	
	Day	Night
Residential	90	80
Commercial	100	100
Industrial	100	100

SOURCE: Federal Transit Administration (FTA), 2006.
NOTES:
dBA = A-weighted decibels; Leq = average or constant sound level; Day = 7 a.m. to 10 p.m.; Night = 10 p.m. to 7 a.m.

State Regulations

Noise

The 2016 California Building Code (California Code of Regulations title 24, part 2) requires that walls and floor/ceiling assemblies separating dwelling units from each other, or from public or service areas, have a sound transmission class (STC) of at least 50, meaning they can reduce noise by a minimum of 50 dB.[163] Building Code section 1207.4, Allowable Interior Noise Levels, also specifies a maximum interior noise limit of 45 dBA (Ldn or CNEL) in habitable rooms, and requires that common interior walls and floor/ceiling assemblies meet a minimum STC rating of 50 for airborne noise.

San Francisco has adopted the 2016 Green Building Standards Code (also part of the State Building Code; California Code of Regulations title 24, part 11, more-commonly known as "Title 24"), which specifies the following insulation standards for Environmental Comfort (section 5.507) to minimize exterior noise transmission into interior spaces for nonresidential buildings:

- Section 5.507.4.1, Exterior Noise Transmission, requires wall and roof-ceiling assemblies to have an STC of at least 50 and exterior windows to have a minimum STC of 30 for any of the following building locations: (1) within the 65 dBA, Ldn, noise contour of a freeway, expressway, railroad, or industrial source; and (2) within the 65 dBA noise contour of an airport. Exceptions include buildings with few or no occupants and where occupants are not likely to be affected by exterior noise, such as factories, stadiums, parking structures, and storage or utility buildings.

163 State Building Code section 1207.2.

- Sections 5.507.4.1.1 and 5.507.4.3 require nonresidential buildings to be designed with exterior walls and roof-ceiling assemblies that have an STC rating of at least 45 to provide an acceptable interior noise level of 50 dBA (Leq) in occupied areas during any hour of operation.
- Section 5.507.4.2, Interior Sound, requires wall and floor-ceiling assemblies separating tenant spaces and separating tenant spaces and public places to have an STC of at least 40.

These requirements are enforced by the San Francisco Department of Building Inspection.

Vibration

There are no state regulations related to construction-induced vibration. However, the California Department of Transportation (Caltrans) consolidated vibration criteria from various sources for assessing the potential damage to structures from ground vibration induced by construction equipment, and they are included in their *Transportation and Construction Vibration Guidance Manual*[164] and summarized in **Table 3.C-6, Vibration Guidelines for Potential Damage to Structures**. As indicated in this table, the building damage criteria for continuous vibration sources is about half of the criteria for transient sources.

TABLE 3.C-6
VIBRATION GUIDELINES FOR POTENTIAL DAMAGE TO STRUCTURES

Structure Type and Condition	Maximum PPV (in/sec)	
	Transient Sources[a]	Continuous/Frequent Intermittent Sources[b]
Extremely fragile historic buildings, ruins, ancient monuments	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: Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013.

NOTES:

in/sec = inches per second; PPV = peak particle velocity

a Transient sources create a single, isolated vibration event, such as blasting or drop balls.
b Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Local Regulations and Guidelines

San Francisco General Plan

The Environmental Protection Element of the San Francisco General Plan contains Land Use Compatibility Guidelines for Community Noise for determining the compatibility of various land

[164] Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013, Table 19, p. 27, *http://www.dot.ca.gov/env/noise/docs/tcvgm-sep2013.pdf*, accessed January 23, 2019.

uses with different noise levels (see **Figure 3.C-3, San Francisco Land Use Compatibility Chart for Community Noise**). These guidelines, which are similar to the state guidelines set forth by the Governor's Office of Planning and Research, indicate maximum acceptable noise levels for various land uses. Although this figure presents a range of noise levels that are considered compatible or incompatible with various land uses, the maximum *satisfactory* noise level is 60 dBA (Ldn) for residential and hotel uses; 65 dBA (Ldn) for school classrooms, libraries, churches, and hospitals; 70 dBA (Ldn) for playgrounds, parks, office uses, retail commercial uses, and noise-sensitive manufacturing/communications uses; and 77 dBA (Ldn) for other commercial uses such as wholesale, some retail, industrial/manufacturing, transportation, communications, and utilities.

The Environmental Protection Element includes the following objectives and policies that pertain to noise: impose traffic restrictions to reduce transportation noise; discourage changes in streets which will result in greater traffic noise in noise-sensitive areas; minimize impact of noise on affected areas; promote site planning, building orientation and design, and interior layout that lessen noise intrusion; promote the incorporation of noise insulation materials in new construction; construct physical barriers to reduce noise transmission from heavy traffic carriers; and promote land uses that are compatible with various transportation noise levels.

Balboa Park Station Area Plan

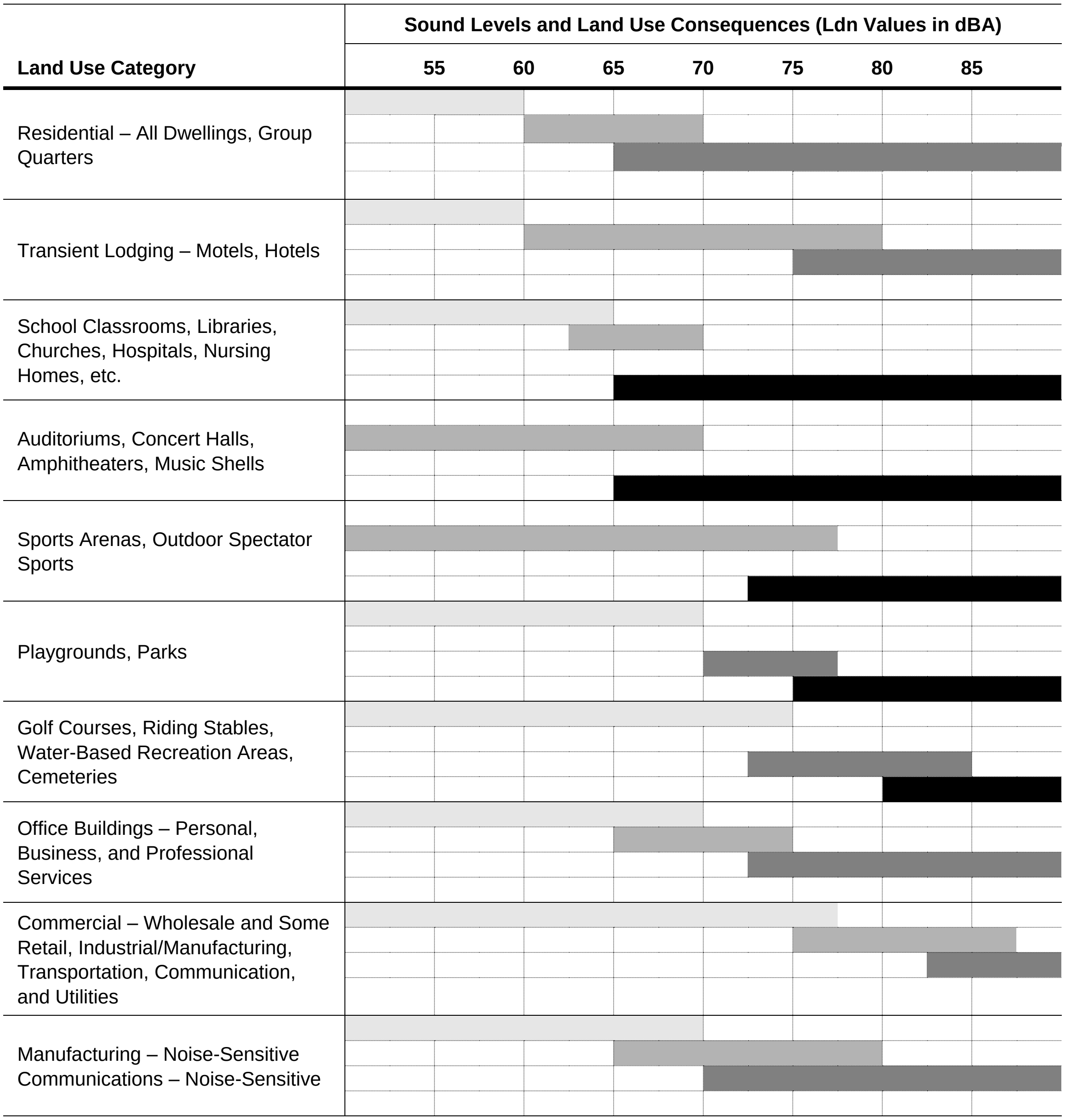
The area plan contains no objectives or policies that directly address noise or vibration within the plan area. The area plan does acknowledge I-280 as a considerable source of noise within the plan area.

Other Local Regulations

San Francisco Police Code

In San Francisco, regulation of noise is addressed in San Francisco Police Code article 29 (the noise ordinance or police code), which states the City's policy is to prohibit unnecessary, excessive, and offensive noises from all sources subject to police power. Police Code section 2900 makes the following declaration with regard to community noise levels: "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."

Police Code article 29, sections 2907 and 2908, regulate construction equipment and construction work at night, while section 2909 provides for limits on any machine, or device, music or entertainment, or any combination of such sources. Sections 2907 and 2908 are enforced by the San Francisco Department of Building Inspection, and section 2909 is enforced by the San Francisco Department of Public Health. Summaries of these and other relevant sections are presented below.



SOURCE: San Francisco Planning Department, *San Francisco General Plan*, Environmental Protection Element, adopted on June 27, 1996, *http://www.sf-planning.org/ftp/General_Plan/I6_Environmental_Protection.htm#ENV_TRA_11*, accessed January 23, 2019.

Satisfactory, with no special noise insulation requirements. Noise levels in this range are considered "Acceptable."

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. Noise levels in this range are considered "Conditionally Acceptable."

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. Noise levels in this range are considered "Conditionally Unacceptable."

New construction or development should generally not be undertaken. Noise levels in this range are considered "Unacceptable."

Figure 3.C-3
San Francisco Land Use Compatibility Chart for Community Noise

Police Code section 2907(a) 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. Exemptions to this requirement include impact tools with approved mufflers, pavement breakers, and jackhammers with approved acoustic shields, and construction equipment used in connection with emergency work. Police Code section 2908 prohibits nighttime construction (between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dBA at the nearest property line unless a special permit has been issued by the City.

Police Code section 2909 generally prohibits fixed mechanical equipment noise and music in excess of 5 dBA more than the ambient noise level from residential sources, 8 dBA more than the ambient noise level from commercial sources, and 10 dBA more than the ambient noise level on public property at a distance of 25 feet or more. Police Code section 2909(d) establishes maximum noise levels for fixed noise sources (e.g., mechanical equipment) of 55 dBA (7 a.m. to 10 p.m.) and 45 dBA (10 p.m. to 7 a.m.) inside any sleeping or living room in any dwelling unit located 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 City's Guidelines for Noise Control Ordinance Monitoring and Enforcement, revised in December 2014, clarifies the definition of *ambient* as the L90 (the level of noise exceeded 90 percent of the time), and this noise descriptor is considered to be a conservative representation of the ambient noise level under most conditions.[165] Ordinance compliance is determined by measuring the L90 for 10 minutes, with and without the noise source at issue. Use of the L90 descriptor is appropriate when determining code compliance of a fixed noise source (such as mechanical equipment), but is not appropriate for other aspects of a CEQA noise impact analysis such as noise created by automobile traffic, which determines noise compatibility based on Ldn or CNEL, a different noise descriptor (as described above in the "Sound Fundamentals" section, p. 3.C-3).

3.C.6 Impacts and Mitigation Measures

Significance Criteria

San Francisco Administrative Code chapter 31 directs the department to identify environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G. As it relates to noise and vibration, Appendix G asks whether the proposed project would:

- Generate a substantial increase, either temporarily or permanently, 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; or
- Generate excessive groundborne vibration or groundborne noise levels; or

[165] City and County of San Francisco, *San Francisco Police Code, Article 29: Regulation of Noise Guidelines for Noise Control Ordinance Monitoring and Enforcement, December 2014 Guidance* (Supersedes All Previous Guidance), December 2014, *https://www.sfdph.org/dph/files/EHSdocs/ehsNoise/GuidelinesNoiseEnforcement.pdf*, accessed January 23, 2019.

- For a project located within the vicinity of a private airstrip or an airport land use plan area or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, expose people residing or working in the area to excessive noise levels.

The project site is not within the vicinity of a private airstrip or an airport land use plan area.[166] Therefore, the proposed project would not result in the long-term exposure of people residing or working in the area to excessive airport-related noise levels, and these criteria are not discussed further in this SEIR.

Approach to Analysis

This analysis evaluates the potential noise impacts associated with construction and operation of proposed residential, retail, childcare facility, and community space on the project site. As discussed in Section 2.G, Project Construction Overview and Schedule, p. 2-38, and shown in Figure 2-18, Proposed Developer's Option Construction Phasing, p. 2-40, and Figure 2-19, Additional Housing Option Construction Phasing, p. 2-41, project construction would be phased over six years, and phased construction would result in future onsite residents of Phase 1 being exposed to noise associated with construction of Phase 2. Once Phase 1 has been completed and occupied in August 2024, future residents at Blocks C, D, E, F, TH1, and TH2 under the Developer's Proposed Option and Blocks C, D, E, F, TH1, TH2, I, and J under the Additional Housing Option, would be subject to construction noise on the project site for up to 2.5 years through 2027. In addition, childcare use would be located in Block B, and the compatibility of this use on this block is considered in the following analysis with respect to noise exposure.

Project Features

Key construction elements of the proposed project that could directly, or indirectly, result in noise or vibration impacts include the following:

- Demolition of the west side berm, and north and east embankments, followed by grading, excavation, and construction of site infrastructure in Phase 0;
- Finish grading, excavation for subgrade parking, construction of building foundations, building construction, architectural coatings, and paving in Phase 1 and Phase 2;
- As stated in SEIR Section 2.G, Project Construction Overview and Schedule, p. 2-38, construction would generally occur between the hours of 7 a.m. and 8 p.m., up to seven days a week.

Mobile equipment such as excavators, graders, backhoes, loaders, dump trucks, compactors, pavers, man lifts, and forklifts would be used for demolition, site clearing, excavation and grading, but also for building construction, and/or hardscape and landscape materials installation. Track/tire-mounted cranes and/or tower cranes would be used for building construction, including but not limited to, steel and precast erection, and building façades. Miscellaneous stationary equipment would include generators, air compressors, and cement/mortar mixers, and a recycling facility to crush and recycle asphalt, rock, and concrete. A variety of other smaller mechanical

[166] San Francisco International Airport, *2019 Noise Exposure Map*, August 13, 2015, *https://media.flysfo.com/media/sfo/noise-abatement/sfo_p150_2019-nem-36x24-plot-signed_ada.pdf*, accessed January 23, 2019.

equipment would also be used at the project site during the construction period, such as jackhammers/pavement breakers, saw cutters, chopping saws, tile saws, stud impact guns, impact drills, torque wrenches, welding machines, and concrete boom pumps. The proposed project would not require pile driving or specialized compaction techniques for imported soil.[167] Parking lot demolition with hoe rams is anticipated to occur over a two-month period in 2021.

Project construction would also generate offsite truck trips for deliveries of concrete and other building materials, transportation of construction equipment to and from the site, hauling soils and debris from the site, and street sweepers.

Key operational elements of the proposed project that could directly or indirectly result in noise impacts include the following:

- Traffic increases associated with long-term development of 3,168 vehicle trips per day in the Developer's Proposed Option and 4,442 trips per day under the Additional Housing Option.[168] These traffic increases could result in traffic noise increases along onsite streets and offsite streets in the project vicinity.
- Operation of mechanical equipment (including heating/ventilation/air conditioning (HVAC) and emergency standby diesel generators) would introduce new fixed mechanical noise sources.[169]

Methodology for Analysis of Construction Impacts

Sensitive Receptors and Construction Phasing

Project construction would require the operation of heavy equipment on the project site as discussed above, which could potentially affect three distinct groups of noise-sensitive receptors: (1) existing, offsite noise-sensitive receptors within 900 feet of the project site, as described in Table 3.C-3, p. 3.C-10, and shown in Figure 3.C-2, p. 3.C-11, respectively, and (2) future proposed onsite residential sensitive receptors, and (3) future onsite childcare use. This analysis considers the potential noise effects on each of these sensitive receptors separately, as described below, with respect to construction phasing.

Construction Phases 0, 1, and 2 could affect the existing, offsite sensitive receptors, the first group of sensitive receptors discussed above. Potential impacts to the second group of sensitive receptors would occur following completion of Phase 1 of construction and occupation of the residential and, potentially, child care uses constructed therein. The proposed phasing schedule would expose future onsite users/occupants of Phase 1 to noise and/or vibration from the construction of Phase 2.

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167 Rockridge Geotechnical, *Draft Preliminary Geotechnical Investigation Proposed Residential Development at Balboa Reservoir Phelan and Ocean Avenues, San Francisco, California*, prepared for BRIDGE Housing Corporation, January 22, 2018.

168 Kittelson & Associates, *Travel Demand Memorandum*, April 29, 2019, Table 6.

169 Consistent with the air quality analysis, it is assumed that there would be two emergency generators for the Developer's Proposed Option and six for the Additional Housing Option. They would be tested for 50 hours per year (consistent with BAAQMD permitting limits), which is roughly equivalent to four hours per month. They would be located at be located in the building basements and their emissions will be ventilated at street-level and a minimum of 50 feet from the property line.

It is also possible that construction could occur over a shorter duration with more intensive activity. In the extreme case, construction could occur over a three-year period with Phases 1 and 2 occurring simultaneously in which no on-site receptors would exist to be impacted.

Construction Noise

This impact analysis evaluates the potential for construction equipment to generate noise levels in excess of established standards using default reference noise levels compiled by the Federal Highway Administration (FHWA)[170] for the types of equipment proposed to be used onsite (see Impact NO-1, p. 3.C-23). This analysis assesses the potential for construction-related noise to cause a substantial temporary or periodic increase in ambient noise levels at the closest existing offsite noise-sensitive receptors, future onsite sensitive receptors, and planned offsite sensitive receptors using FTA methodology for general quantitative noise assessment (see Impact NO-1, p. 3.C-23).[171] The FTA methodology calls for estimating a combined noise level from the simultaneous operation of the two noisiest pieces of equipment expected to be used in each construction phase. This method applies usage factors to each piece of equipment analyzed to account for the time that the equipment is in use over the specified time period. Given the size of the project site, the minimum distance between source and receptor was based on the distance between the closest building boundary and the specified noise-sensitive receptor's property boundary. Project construction noise impacts are evaluated at sensitive receptor locations to determine whether the proposed project would result in: (1) an increase in sustained noise levels that are 10 dBA above the ambient background noise levels over a substantial period of time, or (2) noise levels of 90 dBA daytime Leq. If these quantitative criteria are exceeded, the evaluation then considers the duration and severity of the exceedance to determine whether the project would result in a substantial temporary increase in noise levels.

This analysis also evaluates the potential for construction-related traffic noise impacts along local access roads by determining whether noise-sensitive receptors would be located along proposed/likely construction haul routes and the degree of noise increase on these routes from project-related average daily increases in construction truck traffic (see Impact NO-1, p. 3.C-23). The noise ordinance does not regulate transportation noise on public roadways. Given the duration of construction, impacts from construction truck traffic are assessed using the same criteria as for other construction-related impacts.

Vibration and Groundborne Noise

This analysis focuses on groundborne vibration generated by construction-related activities involving certain types of heavy equipment (see Impact NO-2, p. 3.C-32, for list of construction equipment considered), and evaluates potential vibration impacts on existing offsite sensitive receptors/structures and future onsite receptors/structures.

170 Federal Highway Administration (FHWA), *Construction Noise Handbook,* Chapter 9.0 Construction Equipment Noise Levels and Ranges, Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors, Updated August 24, 2017, *https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm*, accessed on January 25, 2019.

171 U.S. DOT, FTA, *Transit Noise and Vibration Impact Assessment Manual*, September 2018, Section 7, Quantitative Noise Assessment, pp. 172–179, *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 January 25, 2019.

This evaluation assesses vibration significance based on the Caltrans 2013 vibration guidance manual for building damage and sleep disturbance, which can result in adverse health effects.

Methodology for Analysis of Operational Impacts

Sensitive Receptors

As described in the "Methodology for Analysis of Construction Impacts" section, p. 3.C-19, project operation could potentially affect two groups of noise-sensitive receptors: (1) existing, offsite noise-sensitive receptors within 900 feet of the project site and (2) future proposed onsite sensitive receptors which consists of proposed residential and daycare uses that would occur on the project site. This impact evaluation considers both groups of receptors separately as described below.

Noise

Impact NO-3, p. 3.C-33, evaluates the potential for operation of the proposed project to result in permanent increases in ambient noise levels primarily as a result of the addition of new fixed mechanical equipment. The analysis is based on compliance with the noise ordinance requirements for fixed noise sources.

Noise modeling was completed to estimate existing (baseline) and future traffic noise levels along seven street segments in the project area based on traffic volumes presented in SEIR Section 3.B, Transportation and Circulation. Traffic noise modeling was performed using the FHWA Traffic Noise (RD-77-108) Model.[172] The model results (included in SEIR Appendix D, Noise Supporting Information) are used to identify the future incremental noise level increases attributable to vehicle trips generated by project development. Impact NO-4, p. 3.C-36, focuses on operational noise impacts resulting from project-related traffic increases on local roadways both onsite and offsite.

In general, traffic noise increases of less than 3 dBA are barely perceptible to people, while a 5 dBA increase is readily noticeable.[173] Therefore, permanent increases in ambient noise levels of more than 5 dBA are considered to be unacceptable and a significant noise impact in any existing or resulting noise environment. However, in places where the existing or resulting noise environment is "Conditionally Acceptable," "Conditionally Unacceptable," or "Unacceptable" (based on the San Francisco Land Use Compatibility Chart for Community Noise [Figure 3.C-3, p. 3.C-16]) for sensitive noise receptors, any noise increase greater than 3 dBA is considered a significant noise impact. These standards were applied to determine whether the project's incremental traffic-related noise increases would be significant.

With respect to noise from backup diesel generators, impacts are qualitatively assessed when no more than two generators are proposed for any given building. This qualitative assessment considers the frequency of testing for maintenance purposes and the inclusion of noise attenuation features such as parapets, enclosures, baffles, or silencers.

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172 Federal Highway Administration (FHWA), *FHWA- RD-77-108 FHWA Highway Traffic Noise Prediction Model*, 1978.
173 Caltrans, *Technical Noise Supplement (TeNS) to the Traffic Noise Analysis Protocol*, pp. 2-44, September 2013, http://www.dot.ca.gov/env/noise/docs/tens-sep2013.pdf, accessed January 25, 2019.

Vibration and Groundborne Noise

Operational groundborne noise and vibration are not common environmental problems, and even large vehicles (e.g., trucks and buses) do not generally result in perceptible vibration. Therefore, no significant long-term vibration effects are expected to be associated with proposed residential, small retail commercial, and child care uses, and no vibration analysis is required for operation of these proposed uses.

Methodology for Analysis of Cumulative Impacts

The geographic scope of potential cumulative construction noise impacts encompasses a 900-foot radius from the boundaries of the project site. The geographic scope for the analysis of cumulative traffic noise[174] includes the street segments adjacent to intersections analyzed for the project-level analysis in SEIR Section 3.B, Transportation and Circulation.

Cumulative construction noise and vibration impacts are assessed based on a review of the foreseeable future projects (a list-based approach) that are located within the project's 900-foot area of noise influence and are expected to be under construction at the same time as the proposed project (see SEIR Section 3.A.6, Approach to Cumulative Impact Analysis, p. 3.A-8, for a more-detailed description of these projects). Foreseeable future projects that meet these criteria and could affect the same noise-sensitive receptors (those located adjacent to or near the project site or along shared construction haul routes) are identified below in Impact C-NO-1.

The cumulative construction analysis considers the worst-case scenario (i.e., the nearest cumulative projects closest to a receptor (i.e., Archbishop Riordan High School)) for the proposed project because project construction would occur in 2021, followed by Phase 1 in 2022–2023 when it could coincide with cumulative City College projects that may begin construction as early as 2020. Phase 0 would include all the demolition, excavation, and site preparation for the entire site, including near the corner with Archbishop Riordan High School. Additionally, as discussed in Impact NO-1, p. 3.C-23, haul truck trips would generate noise along North Access Road, which is also adjacent to Archbishop Riordan High School and would further contribute to construction noise at this receptor.

Vibration impacts are generally the result of a single source (e.g., railway) or activity (e.g., construction equipment) operating near a receptor. Because these vibration sources generate discrete events, cumulative vibration impacts where two sources combine to result in a cumulative impact are rare in occurrence.[175] For this project, such a combination of sources and events is not expected and cumulative vibration impacts would be the same as project-level vibration.

Cumulative operational traffic noise impacts are assessed qualitatively based on an assessment of if significant cumulative impacts could occur and, if applicable, if the project's contribution to a potential cumulative impact would be cumulatively considerable.

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174 Kittelson Associates, e-mail communication from Amanda Leahy to Chris Sanchez of ESA, March 19, 2019.

175 Per FTA, 2018: When the project will cause vibration more than 5 dB above the existing vibration, the existing source can be ignored, and the standard vibration criteria are appropriate.

Cumulative operational impacts from stationary source equipment are assessed relative to section 2909(a)(1), Residential Property Noise Limits, of the Police Code and section 2909(b), Commercial and Industrial Property Noise Limits. The former code applies to noise generated from a fixed or stationary source(s) located on a residential property or within a residential use in a mixed use property. The standard in section 2909(a)(1), 5 dBA above the ambient at any point outside of the property plane, is the maximum allowable cumulative level of exterior noise produced from any combination of mechanical device(s) originating from an exclusively residential property or from a residential use in a mixed use property. The latter code applies to commercial or industrial property and specifies a standard of 8 dBA above the ambient at any point outside of the property plane.

The proposed project would not include sources of operational vibration and therefore would not have the potential to combine with operational vibration from any adjacent or nearby cumulative projects. Therefore, no cumulative vibration analysis is required, and no cumulative vibration impact would occur.

Impact Evaluation

Construction Impacts

Impact NO-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors above levels existing without the project. (Significant and Unavoidable with Mitigation)

Construction activities would generally occur between the hours of 7 a.m. and 8 p.m., up to seven days a week and would not occur during nighttime hours. Consequently, construction activities would be consistent with San Francisco Police Code section 2908.

Construction-Related Noise Sources

Project implementation would result in operation of heavy equipment on the project site for the demolition of the west side berm, and north and east embankments, construction of new structures and associated infrastructure, and open space improvements. Construction activities would occur intermittently on the project site over the six-year construction duration and could expose nearby existing and future sensitive receptors to temporary increases in noise levels substantially in excess of ambient levels. Construction activity is only proposed to occur during daytime hours and nighttime construction noise impacts would not occur and are not assessed herein. While certain construction activities such as large concrete pours, may require earlier start or later finish times to accommodate such time-specific activities, construction activities that extend beyond normal hours have not been specifically identified by the applicant and would be subject to review, permitting, and approval by the San Francisco Department of Building Inspection.

Phase 0 of construction would include demolition of the parking lot, west side berm, and north and east embankments, followed by grading, excavation, and construction of site infrastructure. Phase 0 would occur in approximately 2021–2022 and would require the use of heavy trucks, material loaders, cranes, drill rigs, jackhammers/pavement breakers, concrete saws, rock crushers, and other mobile and stationary construction equipment listed in **Table 3.C-7, Typical Construction Noise Levels**, p. 3.C-24.

Phase 0 would also include site compaction and stabilization as well as rough grading for the entire project site. Construction activities during this phase would also include trenching and grading for placement of infrastructure, excavation and concrete work for placement of foundations for structures, erection of structures, and open space improvements. Site preparation activities and foundation construction would require the use of excavators, graders, loaders, drill rigs, and concrete/heavy trucks. Parking lot demolition with hoe rams is anticipated to occur over two-month period in 2021.

TABLE 3.C-7
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Equipment	Noise Level (dBA, Lmax at 50 feet)	Noise Level (dBA, Lmax at 100 feet)
San Francisco Noise Ordinance Limit	**86**	**80**
Jackhammer [a]	**89**	**83**
Mounted Impact Hammer (Hoe Ram)	**90**	**84**
Concrete Saw	**90**	**84**
Rock/Concrete Crusher[b]	**90**	**84**
Drill Rig	**84**	**78**
Crane	81	75
Excavator	81	75
Grader	85	79
Backhoe	78	72
Loader	79	73
Dump Truck	76	70
Compactor	83	77
Paver	77	71
Concrete Truck	81	75
Flatbed Truck	74	68
Street Sweeper (vacuum)	82	76
Forklift (Gradall)	83	77
Generator	81	75
Various Saws	78	72
Welder	74	68
Pump	81	75

SOURCES: U.S. Department of Transportation (U.D. DOT), Federal Highway Administration (FHWA), Construction Noise Handbook, 9.0, Construction Equipment Noise Levels and Ranges, Table 9.1, RCNM Default Noise Emission Reference Levels and Usage Factors, updated August 24, 2017, *http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm*, accessed January 24, 2019;
U.S. DOT, FTA, *Transit Noise and Vibration Impact Assessment Manual*, September 2018, *https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf*, accessed January 24, 2019.

NOTES:

The above noise levels are calculated assuming a 100% usage factor at full load (i.e., Lmax noise level). Noise levels in **bold** exceed the San Francisco Noise Ordinance limit, but as indicated, two of the four exceedances are exempt from this limit.

a Exempt from the ordinance noise limit of 86 dBA at 50 feet or 80 dBA at 100 feet.
b Noise measurements from various rock and concrete recycling crusher plants indicate that a crusher and conveyor plant can generate noise levels ranging between 81 and 90 dBA (Leq) at 50 feet. This evaluation conservatively applies the higher reference noise level.

Phases 1 and 2 would involve land development (excavation, site preparation, vertical construction (finish grading, excavation for subgrade parking, construction of foundations, building construction, and architectural coatings), and open space improvements (including hardscaping and landscaping improvements) during each phase. Phase 1 is anticipated to occur from March 2022 to August 2024. Phase 2 is anticipated to occur from August 2024 to February 2027.

Construction-Related Noise Levels

Construction activity noise levels on and near the construction site would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Pile driving is not a proposed method of construction. Table 3.C-7, p. 3.C-24, shows typical noise levels associated with a range of construction equipment that could be required for the project. Most of the construction equipment subject to the noise ordinance would meet police code section 2907(a) limits, except for hoe rams, jackhammers, concrete saws, and the rock/concrete crusher. Hoe rams and jackhammers with approved acoustic shields and intake and exhaust mufflers are exempt from this ordinance limit.[176] Therefore, exceedance of the noise ordinance limit resulting from use of hoe rams and jackhammers would not constitute noise ordinance violations. However, concrete saws are not exempt from compliance with the noise ordinance.

Construction-Related Noise Impacts on Existing Offsite Receptors

The existing offsite sensitive receptors closest to the project site are residences located along the western property line, along Plymouth Avenue and San Ramon Way, approximately 50 feet from the west side of buildings constructed during Phase 1 and Phase 2 on Blocks H, TH1, and TH2 for the Developer's Proposed Option and Blocks H, I, J, TH1, and TH2 for the Additional Housing Option, as indicated in Table 3.C-3, p. 3.C-10. During Phase 0, these receptors would be located approximately 200 feet from demolition activities. Therefore, this analysis conservatively assumes that the berm would be demolished early in Phase 0 and would, therefore, not provide any additional attenuation from construction noise to receptors to the west.

Archbishop Riordan High School would be the receptor nearest to the eastern property line. Archbishop Riordan High School would be located approximately 80 feet from Phase 0 demolition activities which would last approximately two months. The high school is also about 80 feet from the peak construction haul truck activity along North Access Road which would occur over a four-month period. During Phase 1 and Phase 2, the high school would be approximately 50 feet from standard construction activities for Lee Avenue and Block G, respectively.

The receptor nearest to the southern project property line would be the 1100–1150 Ocean Avenue residences on floors two through six. These residences would be located approximately 50 feet from Phase 0 demolition activities and approximately 50 feet or closer to the Lee Avenue roadway extension construction during Phase 1. The residences would be over 200 feet from the remaining portions of Phase 1 construction and 80 feet from Phase 2 construction activities.

[176] See San Francisco Police Code section 2907(b).

Maximum combined noise levels from operation of the noisiest pieces of equipment associated with each construction phase throughout the six-year construction period are presented in **Table 3.C-8, Estimated Daytime Construction-Related Noise Levels at Closest Offsite and Onsite Residential Receptors**, p. 3.C-27.

Table 3.C-8, p. 3.C-27, summarizes the project's daytime construction-related noise impacts on these receptors assuming simultaneous operation of the noisiest pieces of equipment and haul truck noise levels as a conservative analysis. Project construction would generate a total of approximately 4,750 truck trips under the most conservative scenario (Developer's Proposed Option), due to the excavation for the below-grade public parking garage. The truck trips would be primarily phased over the duration of the planned construction activities. During the six-year period, the number of construction trucks traveling to and from the site would vary, depending on the phase and type of construction activity. The peak number of construction vehicle trips (equipment and materials deliveries, and haul trips) would occur during Phase 0 in 2021 and 2022 with approximately 100 truckloads (or 200 one-way truck trips) per day during peak activity. For about 90 percent of the six-year construction period, there would be fewer than 50 trucks per day. A peak volume of 200 daily one-way truck trips over four months in 2022 and occurring over a nine-hour workday (7 a.m. to 4 p.m.) would average 22 truck trips per hour.

The trucks would access the project site via North Access Road from Frida Kahlo Way. As shown in Table 3.C-8, such a truck volume would generate a noise level of 63 dBA (Leq) at 50 feet from the roadway centerline along North Access Road. When added to the off-road equipment noise levels presented in Table 3.C-8, the maximum noise level contributions from construction truck trips would not meaningfully increase the noise levels at the nearest off-site sensitive receptors.

As stated in note c for this table, the maximum construction-related noise levels are adjusted for distance to these receptors. Predicted noise levels are then compared to both the FTA's limit of 90 dBA at sensitive receptor locations at each offsite receptor location to determine the significance of the project's daytime construction noise impact at the closest offsite receptors. As indicated in Table 3.C-8, the combined noise level at existing offsite receptors would not exceed the FTA's standard of 90 dBA at sensitive receptor locations but would exceed the applicable 70 dBA and 71 dBA "Ambient + 10 dBA" standard for westerly and southerly receptors, respectively and the applicable 67 dBA "Ambient + 10 dBA" standard for Riordan High School. Phase 0 demolition would occur over a 10-month period with the noisiest periods of hoe-ram demolition approximately two months in duration. Phase 1 construction would occur over the ensuing 30-month period with the noisiest activity occurring during the first four months of the phase. Phase 2 construction would occur for 30 months after Phase 1 with the noisiest activity occurring during the first seven months of the phase. Given the increase of noise levels over existing ambient levels and the duration of the overall construction period, project-related construction noise impacts at the closest existing offsite receptors would be *significant*.

TABLE 3.C-8
ESTIMATED DAYTIME CONSTRUCTION-RELATED NOISE LEVELS AT CLOSEST OFFSITE AND ONSITE RESIDENTIAL RECEPTORS

Construction Phase and Noisiest Combined Construction Activities	Hourly Leq in dBA at 50 Feet[a]	Minimum Distance between Receptor and Closest Equipment (feet)	Additional Haul Truck Contribution (dBA)[b]	Noise Level (Leq) Adjusted for Distance[c]	Daytime FTA Standard at Residential Uses (dBA)	Does Noise Level Exceed FTA Standard?	Ambient + 10 Dba Standard[d] at Closest Receptor	Does Noise Level Exceed Ambient + 10 Dba Standard?
Existing Noise Receptors: Residential Receptors 1220–1382 Plymouth Avenue								
Phase 0 – Surface Preparation and Demolition (Hoe Ram and Concrete Crusher)[e]	85	200	NA	74	90	No	70e	**Yes**
Phase 1 Building Construction (Compactor and Gradall Forklift)[f]	81	25	NA	87	90	No	70 [f]	**Yes**
Phase 2 Building Construction (Compactor and Gradall Forklift)[f]	81	25	NA	87	90	No	70 [f]	**Yes**
Existing Noise Receptors: Residential Receptors Located at 1100 and 1150 Ocean Avenue								
Phase 0 – Surface Preparation and Demolition (Hoe Ram and Concrete Crusher)[d]	85	50	NA	85	90	No	71 [g]	**Yes**
Phase 1 Building Construction (Compactor and Gradall Forklift)	81	50	NA	81	90	No	71 [g]	**Yes**
Phase 2 Building Construction (Compactor and Gradall Forklift)	81	80	NA	77	90	No	71 [g]	**Yes**
Existing Noise Receptor: Archbishop Riordan High School								
Phase 0 – Surface Preparation and Demolition (Hoe Ram and Concrete Crusher)[d]	85	80	63	82	90	No	67[h]	**Yes**
Phase 1 Building Construction (Compactor and Gradall Forklift)[f]	81	50	60	81	90	No	67[h]	**Yes**
Phase 2 Building Construction (Compactor and Gradall Forklift)[f]	81	50	60	81	90	No	67[h]	**Yes**
Future Noise Receptors: Proposed Residential Receptors Located in Buildings TH1, TH2, C, D, E, or F and Childcare Receptors in Building B								
Phase 2 Building Construction (Compactor and Gradall Forklift)[e]	81	50	60	81	90	No	63	**Yes**

Construction Phase and Noisiest Combined Construction Activities	Hourly Leq in dBA at 50 Feet[a]	Minimum Distance between Receptor and Closest Equipment (feet)	Additional Haul Truck Contribution (dBA)[b]	Noise Level (Leq) Adjusted for Distance[c]	Daytime FTA Standard at Residential Uses (dBA)	Does Noise Level Exceed FTA Standard?	Ambient + 10 Dba Standard[d] at Closest Receptor	Does Noise Level Exceed Ambient + 10 Dba Standard?

SOURCE: ESA, 2019.

NOTES:

dBA = A-weighted decibel; FTA = Federal Transit Administration; noise levels in **bold** exceed the indicated standard.

a As calculated with the RCNM model with no attenuation for intervening berms or buildings.

b As measured at 50 feet from the roadway centerline along North Access Road. Contribution would be much lower at receptors that are distant from North Access Road.

c Combined hourly noise levels were attenuated 6 dB for every doubling of distance from the source and a conservative 5 dBA for the presence of the existing 30-foot berm along the western side of eth Project site.

d People often perceive 10dBA as a doubling of loudness. As indicated in Table 3.C-2, p. 3.C-9, the daytime ambient noise levels were measured as follows: 60 dBA (Leq) at measurement location ST-4 near Plymouth Avenue receptors; 61 dBA (Leq) at measurement location ST-2 near 1100 and 1150 Ocean Avenue residential receptors; and 57 dBA at measurement location ST-1 near Riordan Archbishop High School.

e 1100 and 1150 Ocean Avenue are the closest sensitive receptors to parking areas that would use hoe ram for demolition. Because the RCNM model does not have a category for concrete crushing, a second how-ram was used as a proxy for the concrete crusher to be used in Phase 0 demolition.

f Measurement Location ST-4 (1280 Plymouth Avenue) represents the closest noise measurement location to these receptors. Ambient noise levels were measured at 60 dBA at this location. When this ambient noise level is applied to the “Ambient + 10 dBA” standard, the standard applied at these receptors is 70 dBA (daytime Leq).

g Measurement Location ST-2 (Lee Avenue terminus) represents the closest noise measurement location to receptors at 1100–1150 Ocean Avenue. Ambient noise levels were measured at 61 dBA at this location. When this ambient noise level is applied to the “Ambient + 10 dBA” standard, the standard applied at these receptors is 71 dBA (daytime Leq).

h Measurement Location ST-1 (South border of Archbishop Riordan High School) represents the closest noise measurement location to this receptor. Ambient noise levels were measured at 57 dBA at this location. When this ambient noise level is applied to the “Ambient + 10 dBA” standard, the standard applied at these receptors is 67 dBA (daytime Leq).

As stated in the footnote to Table 2-2, p. 2-38, the phasing of project implementation would be subject to changes due to market conditions and other unanticipated factors. Consequently, construction could be complete as early as 2024 or extend beyond 2027. If construction occurs over a shorter period than shown in Table 2-2 (e.g., Phases 1 and 2 occurring simultaneously following Phase 0), a relatively larger amount of construction would take place during a relatively shorter period of time, thereby increasing the typical daily construction activity. The same pieces of equipment would be operating under a compressed construction schedule. Therefore, the maximum noise level would not change based on the methodology above combining the operation of the noisiest pieces of equipment with each phase. Under the compressed construction schedule, the construction noise impact from off-road equipment would be *significant*.

Construction Noise Impacts on Future Onsite Receptors

Future project residents and/or childcare users living in or otherwise using new buildings built on the project site during Phase 1 of construction would be exposed to construction noise generated during Phase 2 project construction. It is assumed that Phase 2 of construction could be conducted as close as 50 feet from Blocks TH1, TH2, C, D, E, or F for the Developer's Proposed Option and Blocks TH1, TH2, C, D, E, F, I, and J for the Additional Housing Option. Ambient noise levels in this area were monitored to be 53 to 54 dBA (but would likely be higher with the addition of Phase 1 traffic on local roadways). Consequently, the "Ambient + 10 dBA" standard would be 63 dBA at these locations. Table 3.C-8 presents estimated construction noise levels at the closest onsite future receptors during Phase 2 of project construction including haul truck noise, and compares these noise levels to the FTA's limit of 90 dBA at sensitive receptor locations and the "Ambient + 10 dBA" standard. As indicated in Table 3.C-8, the combined noise level at future onsite receptors would not exceed the FTA's standard of 90 dBA at sensitive receptor locations but would exceed the 63 dBA "Ambient + 10 dBA" standard. Therefore, project-related construction noise impacts at the closest future onsite receptors would be *significant*.

Mitigation of Construction-Related Noise Impacts

Implementation of feasible noise control measures as specified in **Mitigation Measure M-NO-1, Construction Noise Control Measures**, which include locating noisy activities as far from receptors as feasible and shielding noisy stationary equipment would reduce noise levels by as much as 10 to 15 dBA.[177] While all construction noise would be below the FTA criteria of no greater than 90 dBA, all feasible mitigation would be insufficient to reduce noise levels to 10 dBA above ambient for a majority of activity that would occur nearest to receptors. As indicated in Table 3.C-8, all three phases of construction would result in the nearest receptors being exposed to noise levels exceeding the "Ambient + 10 dBA" standard It should be noted that the majority of construction activity would not occur at the closet project site boundary to these closest receptors. However, given the extended duration of these phases of construction and given that noise levels would exceed the standard by as much as 17 dBA, this impact is conservatively considered to be ***significant and unavoidable with mitigation***.

[177] U.S. EPA, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, pp. 14 and 26, December 1971, *https://nepis.epa.gov/* (search for NTID3001), accessed on January 24, 2019. Industrial Noise Control, Cut Sheet for Portable Noise Screen, 2014.

Mitigation Measure M-NO-1 includes mitigation measures to ensure compliance with the noise ordinance limits and to reduce construction noise impacts identified in Impact NO-1 to the degree feasible.

Mitigation Measure M-NO-1: Construction Noise Control Measures. The project sponsor shall implement a project-specific noise control plan that has been prepared by a qualified acoustical consultant and approved by the planning department. The noise control plan may include, but not limited to, the following construction noise control measures:

- To the extent that it does not extend the overall schedule, conduct demolition of the parking lot at the northern portion of the project site during periods when Archbishop Riordan High School is not in session.
- Require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds).
- Require the general contractor to locate stationary noise sources (such as the rock/concrete crusher, or compressors) as far from adjacent or nearby sensitive receptors as possible, to muffle such noise sources, and/or to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as 5 dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, to the maximum extent practicable.
- Require the general contractor to use impact tools (e.g., jackhammers and pavement breakers) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which would reduce noise levels by as much as 10 dBA.
- Include noise control requirements for construction equipment and tools, including specifically concrete saws, in specifications provided to construction contractors. Such requirements could include, but are not limited to, erecting temporary plywood noise barriers around a construction site, particularly where a site adjoins noise-sensitive uses;[178] utilizing noise control blankets on a building structure as the building is erected to reduce noise levels emanating from the construction site; performing all work in a manner that minimizes noise; and using equipment with effective mufflers. Moveable sound barrier curtains can provide up to 15 dBA of sound attenuation.[179]
- Undertake the noisiest activities during times of least disturbance to surrounding residents and occupants (9 a.m. to 4 p.m.); and select haul routes that avoid the North Access Road and the adjacent Archbishop Riordan High School and residential uses along Plymouth Avenue.

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[178] Effective noise barriers typically reduce noise levels by 5 to 10 dBA (FHWA, *Keeping the Noise Down: Highway Traffic Noise Barriers*, February 2001, *https://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/keepdown.pdf*, accessed January 24, 2019.

[179] Industrial Noise Control, Cut Sheet for Portable Noise Screen, 2014.

- Postpone demolition of the west side berm to the end of Phase 0, to the extent that it does not extend the overall schedule, so that it may serve as a noise attenuation barrier for the receptors to the west for earlier Phase 0 demolition and construction activities.
- Notify the planning department's development performance coordinator at the time that night noise permits are requested or as soon as possible after emergency/unanticipated activity causing noise with the potential to exceed noise standards has occurred.

The general contractor or other designated person(s) shall prepare a weekly noise monitoring log report that shall be made available to the planning department upon request. The log shall include any noise complaints received, whether in connection with an exceedance or not, as well as any noise complaints received through calls to 311 or DBI if the contractor is made aware of them (for example, via a DBI notice, inspection, or investigation). Any weekly report that includes an exceedance or for a period during which a complaint is received shall be submitted to the planning department within three business days following the week in which the exceedance or complaint occurred. A report also shall be submitted to the planning department at the completion of each construction phase. The report shall document noise levels, exceedances of threshold levels, if reported, and corrective action(s) taken.

Significance after Mitigation: Significant and Unavoidable. Implementation of construction-related noise control measures in Mitigation Measure M-NO-1 would reduce the project's temporary or periodic increases in ambient noise levels. However, given that there would still be periods of peak construction activity exceeding the "Ambient + 10 dBA" standard at the nearest sensitive receptor locations for occasional periods when activity would be conducted at the property lines nearest to receptors, these occurrences would occur in all three phases of construction over an extended period of up to six years Plywood barriers or moveable sound barrier curtains can provide, at best, 10 to 15 dBA of sound attenuation but would not be effective for elevated receptors in the 1100–1150 Ocean Avenue residences. If construction were to be conducted under the compressed schedule and be complete as early as 2024, a relatively larger amount of construction would take place during a relatively shorter period of time, thereby increasing the typical daily construction activity. Therefore, in either case the construction noise impacts would be significant and unavoidable with mitigation.

Comparison of Impact NO-1 to PEIR Impact Analysis

The construction noise impact was identified as less than significant in PEIR initial study Section 5, Noise. The PEIR determined that compliance with the San Francisco Noise Ordinance would reduce construction noise impacts to a less-than-significant level. Because the proposed project could temporarily generate noise levels at the nearest sensitive receptors in excess of 10 dBA over existing level, this SEIR identifies a significant project-specific construction noise impact. While construction-related noise would be reduced with Mitigation Measure M-NO-1, this exceedance would remain significant and unavoidable with mitigation given the duration of the overall construction period. Therefore, the project would result in a new or substantially more -severe significant impacts related to construction noise than was previously identified in the PEIR.

Vibration

Impact NO-2: Project construction would not generate excessive groundborne vibration that could result in building damage. (Less than Significant)

The proposed project would not include the types of construction activities that could produce substantial groundborne vibration such as blasting or pile driving. However, construction equipment used for demolition, site preparation, and excavation activities, such as hoe rams and bulldozers, could generate varying degrees of temporary groundborne vibration, with the highest levels expected during demolition and excavation.

This analysis evaluates the significance of construction-related vibration on structures and people (receptors), specifically cosmetic damage effects on structures and sleep disturbance and associated health effects on people. For building damage, the threshold limit depends on the architectural characteristics of the potentially affected structure (see Table 3.C-6, p. 3.C-14), but for modern residential, industrial and commercial buildings, a standard of 0.5 in/sec PPV is applied. The potential for sleep disturbance vibration effects are evaluated only when construction activities are proposed during the nighttime hours, which would not occur under the proposed project, therefore, there would be no sleep disturbance vibration impacts.

Construction-Related Vibration Impacts on Existing Buildings

Typical vibration levels associated with the operation of various types of construction equipment at distances of 25, 80, and 300 feet away from the vibration source are listed in **Table 3.C-9, Vibration Levels for Construction Equipment**. These distances generally correspond to the closest setback distances between construction activities and existing adjacent structures.

As shown in Table 3.C-6, p. 3.C-14, depending on the type of vibration (transient versus continuous), groundborne vibration generated by project-related demolition and construction activities above 0.5 in/sec PPV could cause cosmetic damage to new or older nearby structures. As shown Table 3.C-9, estimated vibration levels of PPV's would be well below the 0.5 in/sec threshold and this impact would be ***less than significant***.

Comparison of Impact NO-2 to PEIR Impact Analysis

Construction-related vibration impacts were not addressed in the PEIR. Because the proposed project could temporarily generate construction-related vibration at levels below building damage thresholds and would not conduct construction activities during nighttime hours this SEIR identifies a less-than-significant project-specific construction vibration impact. Therefore, the project would result in no new or substantially more severe significant impacts related to construction noise than was previously identified in the PEIR.

TABLE 3.C-9
VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec)[a]		
	At 25 Feet (Plymouth Ave. Residences)	At 80 Feet (1100 and 1150 Ocean Ave. Residences)	At 300 Feet (City College Multi-Use Building)
Vibratory Roller/Compactor	0.21	0.058	0.014
Large Bulldozer	0.089	0.025	0.006
Hoe Ram	0.089	0.025	0.006
Loaded Trucks	0.076	0.021	0.005
Jackhammer	0.035	0.010	0.002

SOURCES: Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013, pp. 29–34, *http://www.dot.ca.gov/hq/env/noise/publications.htm*, accessed on January 25, 2019;
FTA, *Transit Noise and Vibration Impact Assessment Manual*, September 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 January 25, 2019.

NOTES:

Vibration levels in **bold** would exceed the 0.5 in/sec PPV standard for cosmetic damage None of the construction equipment would exceed these values.

[a] Vibration amplitudes for construction equipment assume normal propagation conditions and were calculated using the following formula: PPV (equip) = PPV (ref) x (25/D)1.1 where:

- PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance
- PPV (ref) = the reference vibration level in in/sec from pp. 31–33 and Table 18 of the Caltrans Vibration Guidance Manual, as well as Table 12-2 of the FTA's Noise and Vibration Guidance Manual
- D = the distance from the equipment to the receiver

Distances represent the following: (1) 50 feet: minimum distance between closest Residential structures on Plymouth Avenue that would be present) during construction; (2) 80 feet: minimum separation between closest construction activities to the existing adjacent buildings at 1100 and 1150 Ocean Avenue; (3) 300 feet: minimum distance between closest construction activities to the existing City College Multi-Use Building.

Operational Impacts

Impact NO-3: Operation of the fixed mechanical equipment on the project site could result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, and permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance. (Less than Significant with Mitigation)

Operation of the proposed project would increase ambient noise levels in the immediate vicinity primarily through the onsite use of fixed mechanical equipment, such as HVAC systems and emergency generators. Operation of HVAC equipment (and any other fixed mechanical equipment) would be subject to the San Francisco Noise Ordinance and two noise limits specified in Police Code section 2909. Sections 2909(a), (b), and (c) state that any machine, or device, music or entertainment, or any combination of such sources are not permitted to result in noise levels that exceed the existing ambient (L90) noise level by more than 5 dBA on residential property, 8 dBA on commercial and industrial property, and 10 dBA at 25 feet from the source on public property. Section 2909(d) states that in order to prevent sleep disturbance, no fixed noise source may cause the noise level measured inside any sleeping or living room in a dwelling unit on residential property to exceed 45 dBA between 10 p.m. and 7 a.m. or 55 dBA between 7 a.m. and 10 p.m. with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

Under the Developer's Proposed Option, there would be two backup diesel generators and, under the Additional Housing Option, there would be six generators. Operation of generators during a power failure or other emergency would be exempt from the restrictions of the City's noise ordinance.

Maintenance operation of emergency standby diesel generators would occur for approximately four hours per month (50 hours annually) for testing, and such a short noise event would not substantially alter ambient noise levels. The generators would be located on Blocks B and D under the Developers Proposed option and on Blocks A, B, C, D, E, and G under the Additional Housing Option. Generators would contain parapet/garage screens. and testing would occur intermittently during daytime hours. Because maintenance testing of generators would be of limited duration and would be screened from view by adjacent sensitive land uses, noise impacts from maintenance operation of generators would be less than significant.

As shown in Figure 3.C-2, p. 3.C-11, the closest existing offsite noise-sensitive receptors are located at 1100 and 1150 Ocean Avenue and 1220–1382 Plymouth Avenue, and Archbishop Riordan High School. Additionally, future occupants of the proposed residential units would be noise-sensitive receptors with respect to operational noise from mechanical equipment. As noted in Table 3.C-8, p. 3.C-27, ambient noise levels were measured at 60 dBA at 1100 and 1150 Ocean Avenue and 1220–1382 Plymouth Avenue, and 57 dBA at Archbishop Riordan High School. The ambient noise level at the future onsite sensitive receptors would be 60 dBA or higher as local traffic is generated on new internal roadways.

Operational noise levels from HVAC systems are compared to the "Ambient + 5 dBA"[180] and 45 dBA interior[181] standards at the closest residential receptors in **Table 3.C-10, Predicted HVAC Equipment Noise**. When the ambient noise level is applied to the "Ambient + 5 dBA" standard, the standard at the closest offsite receptors at 1100 and 1150 Ocean Avenue and 1220–1382 Plymouth Avenue is 65 dBA, and 62 dBA for Archbishop Riordan High School. When the ambient noise level is applied at the closest onsite receptors the standard is 65 dBA or higher, which assumes a future background of 60 dBA, depending on the degree of traffic generated on local roadways of the project site.

180 Although the ordinance limit is 8 dBA at the property plane for commercial/industrial properties, the impact analysis applies the Ambient + 5 dBA threshold to all proposed uses for purposes of analysis and capturing all potential noise impacts. However, the mitigation measure specifies both the 5 dBA for residential properties and 8 dBA standard for commercial/industrial properties, consistent with Police Code section 2909.

181 The 45 dBA nighttime interior limit is equivalent to an exterior limit of 60 dBA with the windows open because it assumes a 15 dBA reduction is achieved with the windows open. Open windows are assumed in this analysis because these are permanent noise sources, whereas closed windows are assumed (with a 25 dBA reduction) for construction noise because it is temporary.

TABLE 3.C-10
PREDICTED HVAC EQUIPMENT NOISE

Receptor	Existing Noise Level	Existing + 5 dBA Standard	HVAC Contribution	Potentially Exceed Standard?
1220–1382 Plymouth Avenue	60	65	75	Yes
1100 and 1150 Ocean Avenue	60	65	75	Yes
Archbishop Riordan High School	57	62	75	Yes
Proposed Residential Receptors Located in Buildings TH1, TH2, C, D, E, or F and Childcare Receptors in Building	60	65	75	Yes

SOURCE: ESA, 2019.

Depending on size, noise from HVAC equipment could generate noise levels of up to 75 dBA (Leq or L90[182]) at 50 feet.[183] At the time of this assessment, details regarding the proposed project's HVAC system equipment were not known. However, for residential structures of three stories or more it is most common for HVAC systems to be located on rooftops or within mechanical penthouses on rooftops, similar to existing residences south of the project site on 1100 and 1150 Ocean Avenue. As shown in Table 3.C-3, p. 3.C-10, the closest existing offsite receptors are located 50 to 80 feet to the project site, while the closest future onsite receptors could be as close as 50 feet from these fixed mechanical noise sources.

Given the project's proximity to existing offsite receptors and future onsite receptors, noise levels of 75 dBA Leq from fixed mechanical equipment would be possible at the property line and could exceed the "Ambient + 5 dBA" and 45 dBA interior standards at these receptors. Assuming a conservative building attenuation level of 15 dBA with windows open[184], HVAC equipment and/or generators must not exceed 65 dBA at a distance of 50 feet to ensure compliance with section 2909(d) that indoor noise levels do not exceed the 45 dBA. Thus, it is possible that HVAC and emergency generator testing at the proposed project buildings could result in noise levels exceeding the interior standards of section 2909(d), which would be a significant operation noise impact.

Mitigation Measure M-NO-3, Fixed Mechanical Equipment Noise Controls, is identified to address this potential significant noise impact.

With incorporation of noise attenuation measures for HVAC equipment and other fixed mechanical equipment (e.g., provision of sound enclosures/barriers, addition of roof parapets to block noise) and compliance with the 45 dBA interior noise limits specified in Mitigation Measure M-NO-3, fixed mechanical equipment noise would be reduced, and acceptable noise levels would be achieved at both

[182] Because these noise sources produce a constant noise level when operating (as opposed to variable noise levels), the Leq noise level for this type of equipment is also considered to be equivalent to L90.
[183] City and County of San Francisco, Draft EIR for Potrero Power Station Mixed-Use Development Project Draft EIR Case No. 2017-011878ENV and City and County of San Francisco Draft EIR for 3333 California Street Mixed Use Project Case No. 2015—14-28ENV.
[184] U.S. EPA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974, *http://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.pdf*, accessed January 23, 2019.

offsite and onsite sensitive receptors and, consistent with Police Code section 2909(d), potential noise impacts on future onsite receptors would be ***less than significant with mitigation***.

> **Mitigation Measure M-NO-3: Fixed Mechanical Equipment Noise Controls.** Noise attenuation measures shall be incorporated into all fixed mechanical equipment (including HVAC equipment) installed on all buildings that include such equipment as necessary to meet noise limits specified in Police Code section 2909. Interior noise limits shall be met under both existing and future noise conditions.
>
> Noise attenuation measures could include provision of sound enclosures/barriers, addition of roof parapets to block noise, increasing setback distances from sensitive receptors, provision of louvered vent openings, location of vent openings away from adjacent residential uses, and restriction of generator testing to the daytime hours.
>
> After completing installation of the HVAC equipment but before receipt of the Certificate of Occupancy for each building, the project sponsor shall conduct noise measurements to ensure that the noise generated by fixed mechanical equipment complies with section 2909(a) and (d) of the San Francisco Noise Ordinance. No Final Certificate of Occupancy shall be issued for any building until the standards in the Noise Ordinance are shown to be met for that building.
>
> **Significance after Mitigation:** Less than Significant

Comparison of Impact NO-3 to PEIR Impact Analysis

Operational noise impacts from fixed mechanical sources were not addressed in the PEIR, as there was no project-specific analysis for the Balboa Reservoir site. Because the proposed project could generate noise from fixed mechanical HVAC equipment that may exceed limits established in Police Code sections 2909(a), (b), (c), and (d), this SEIR identifies a significant project-specific operational noise impact. However, this exceedance would be reduced to a less-than-significant level through implementation of Mitigation Measure M-NO-3. Therefore, the project would result in no new or substantially more severe significant impacts related to operational noise impacts from fixed mechanical sources than was previously identified in the PEIR.

Impact NO-4: Project traffic would not result in a substantial permanent increase in ambient noise levels. (Less than Significant)

Operation of the proposed project would result in permanent increases in ambient noise levels along roadways in the project vicinity, primarily through project-related increases in traffic. For traffic noise impacts, an increase of more than 5 dBA is considered a significant increase when existing levels are 65 dBA or less, which is the case for the roadways analyzed in this project-level analysis.

Noise modeling was completed to estimate existing (baseline) and future (with the proposed project) traffic noise levels along seven street segments that have sensitive receptors in the project area based on traffic volumes presented in SEIR Section 3.B, Transportation and Circulation. Noise modeling results are presented in **Table 3.C-11, Modeled Traffic Noise Levels for the Developer's Proposed option and the Additional Housing Option**.

TABLE 3.C-11
MODELED TRAFFIC NOISE LEVELS FOR THE DEVELOPER'S PROPOSED OPTION AND THE ADDITIONAL HOUSING OPTION

Roadway Segment	Existing dBA, Leq (2018)	Existing plus Project dBA, Leq	dBA Difference	Significant Increase?
Developer's Proposed Option Weekday Peak Hour Noise Levels (4 p.m.–6 p.m.)				
Frida Kahlo Way between Ocean Avenue and Cloud Circle	64.1	64.0	0	No
Frida Kahlo Way between City College North and Judson Avenue	63.0	63.3	0.3	No
Lee Avenue between Ocean Avenue and the Project Site	55.6	59.2	3.6	No
Lee Avenue between Holloway Avenue and Ocean Avenue	55.6	56.6	1.0	No
Plymouth Avenue between Ocean Avenue and Southwood Drive	55.8	55.8	0	No
City College North between Frida Kahlo Way and the Project Site	58.4	59.0	0.6	No
Judson Avenue between Frida Kahlo Way and Gennessee Street	61.6	61.8	0.2	No
Additional Housing Option Weekday Peak Hour Noise Levels (4 p.m.–6 p.m.)				
Frida Kahlo Way between Ocean Avenue and Cloud Circle	64.1	64.0	0	No
Frida Kahlo Way between City College North and Judson Avenue	63.0	63.6	0.6	No
Lee Avenue between Ocean Avenue and the Project Site	55.6	59.7	4.1	No
Lee Avenue between Holloway Avenue and Ocean Avenue	55.6	56.9	1.3	No
Plymouth Avenue between Ocean Avenue and Southwood Drive	55.8	55.8	0	No
City College North between Frida Kahlo Way and the Project Site	58.4	60.2	1.8	No
Judson Avenue between Frida Kahlo Way and Gennessee Street	61.6	62.0	0.4	No

SOURCE: ESA, 2019; Kittelson, 2019.

NOTES:

[a] Road center to receptor distance is assumed to be 50 feet for values shown in this table. Noise levels were determined using the FHWA traffic noise model. The average speed on these segments is assumed to be 25 miles per hour. In an existing ambient noise environment below 65 dBA, which is the case for all roadways analyzed in this table, an incremental increase is considered significant if the noise increase is equal to or greater than 5.0 dBA.

As shown in Table 3.C-11, project implementation would result in traffic noise increases ranging from 0 to 4.1 dBA on local roadways near the project site. Of the seven roadway segments examined, traffic noise increases would not exceed the above thresholds on any of the roadways examined. While the noise level increase along Lee Avenue would be as high as 4.1 dBA under the Additional Housing Option, because the existing noise level along Lee Avenue are within the "normally acceptable" range for residential uses, the 5 dBA increase threshold applies and the impact is ***less than significant***.

Mitigation: None required.

Comparison of Impact NO-4 to PEIR Impact Analysis

Traffic noise increases were identified as less than significant in the PEIR and no mitigation measures were required. The above analysis confirms this finding on a project-specific level. Therefore, the project would result in no new or substantially more severe significant impacts related to construction noise than was previously identified in the PEIR.

Cumulative Impacts

Construction

Impact C-NO-1: Cumulative construction of the proposed project, in combination with construction of reasonably foreseeable future projects, could cause a substantial temporary or periodic increase in ambient noise levels. (Significant and Unavoidable with Mitigation)

In general, the potential for cumulative noise increases associated with project construction would result if there are any other projects located nearby that could be constructed at the same time and could affect the same sensitive receptors. The closest existing sensitive receptors to the project site are residential units located along Plymouth Avenue approximately 50 feet west of the project site and on Ocean avenue approximately 80 feet south of the project site. Additionally, Archbishop Riordan High School which is considered noise-sensitive as a school land use and because of boarding students, is as close as 80 feet to the northern project boundary and approximately 40 feet from the North Access Road. The locations of these and other nearby sensitive receptors are generally indicated with orange shading in Figure 3.C-2, p. 3.C-11.

As described in Section 3.A.6, Approach to Cumulative Impact Analysis, p. 3.A-8, the City College facilities master plan includes some projects on the east basin that would be within 900 feet of the Balboa Reservoir west basin project site. These projects could generate construction-related noise levels at the same time as the proposed project.

The facilities master plan identifies two structures on the east basin that are identified in Table 3.A-2, p. 3.A-13: the Performing Arts Education Center located west of Frida Kahlo Way, approximately 300 feet from the Balboa Reservoir project site and approximately 300 feet from the closest existing sensitive receptors to the north; and the East Basin Parking Structure located west of Frida Kahlo Way, adjacent to the project site and approximately 80 feet from the closest existing sensitive receptors.

As also described in Section 3.A.6, after the City College Board of Trustees adopted the facilities master plan in March 2019, City College staff presented a facilities planning update on a potential bond measure that would be anticipated to fund construction of the master plan projects. That update excluded the parking structure and the Performing Arts and Education Center was replaced with a smaller Diego Rivera Theater and a Science, Technology, Engineering, Art, and Math (STEAM) building, the latter of which is a smaller version of the STEAM complex shown east of Frida Kahlo Way in the facilities master plan. These two buildings together would be smaller than the Performing Arts and Education Center identified in the facilities master plan, and cumulative construction noise impacts under the bond presentation scenario would, thus, be similar to the facilities master plan projects on the east basin.

The facilities master plan, however, remains the latest adopted plan for City College and is, thus, considered the best available information as of the time of this Draft SEIR publication. To the extent that the facilities master plan or other adopted document contains revised information, the City will analyze the impacts thereof as appropriate. This cumulative analysis acknowledges the possibility that these facilities master plan projects on the east basin could generate construction-related noise levels at the same time as the proposed project.

Cumulative Noise Impacts on Existing Offsite Receptors

With respect to existing offsite receptors, the closest cumulative project where concurrent construction would have the potential to cumulatively increase noise levels at existing sensitive receptors would be the City College East Basin Parking Structure, although the Performing Arts Center is also in the same campus area, which is located approximately 80 feet south of Archbishop Riordan High School. As a state institution, City College is not subject to local regulations such as the restrictions of the City's noise ordinance including noise limits for construction.

As shown in **Table 3.C-12, Phase 0 Demolition Noise at the Nearest Sensitive Receptor to City College East Basin**, when noise levels associated with hoe ram demolition of the parking area for the East Basin Parking Structure project are combined with noise levels associated with hoe ram and concrete crushers used for demolition of the project site, and are adjusted for distance and usage factors, the two projects could generate a cumulative noise level of 84 dBA (Leq) at the closest sensitive receptors at Archbishop Riordan High School. This cumulative analysis considers the worst-case scenario (i.e., both projects closest to Archbishop Riordan High School) considering demolition, excavation, and site preparation near the corner with Archbishop Riordan High School.

TABLE 3.C-12
PHASE 0 DEMOLITION NOISE AT THE NEAREST SENSITIVE RECEPTOR TO CITY COLLEGE EAST BASIN

Receptor	Exiting Noise Level	Project Contribution	City College Project Contribution	Resultant Noise level	10 dB + Ambient Threshold	Significant?
Phase 0 – Surface Preparation and Demolition						
Archbishop Riordan High School	57	82	79	**84**	67	**Yes**

SOURCE: ESA, 2019.

The cumulative construction noise level of 84 dBA (Leq)would be below the FTA's daytime limit of 90 dBA at sensitive receptor locations. However, this cumulative noise level of 84 dBA (Leq) at the closest sensitive receptors would exceed the "Ambient + 10 dBA" limit of 67 dBA (Leq) during the daytime hours,[185] at the nearest sensitive receptor locations. These occurrences would be intermittent and generally occur only during the first months of demolition and site preparation and would be significant cumulative impact without mitigation.

Implementation of noise controls during all construction phases as specified in Mitigation Measure M-NO-1, p. 3.C-30, would reduce the project's contribution to this cumulative impact to the closest offsite receptors conservatively assuming simultaneous construction. Assuming a peak reduction of 10 dBA with the Mitigation Measure M-NO-1, the contribution of the project would be reduced to 74 dBA, or approximately 7 dBA greater than the "Ambient + 10 dBA" threshold, which would still be a significant impact at the receptor. The proposed project's contribution to this cumulative impact would be cumulatively considerable. Therefore, this cumulative impact would be ***significant and unavoidable with mitigation***.

> **Mitigation Measure M-NO-1: Construction Noise Control Measures** (see Impact NO-1, p. 3.C-30).
>
> **Significance after Mitigation:** Significant and Unavoidable

Comparison of Impact C-NO-1 to PEIR Impact Analysis

The PEIR did not contain an analysis of cumulative construction noise impacts. However, the PEIR determined that compliance with the San Francisco Noise Ordinance would reduce construction noise impacts to a less-than-significant level. The significant and unavoidable cumulative noise impact identified in Impact C-NO-1 would be a new significant and unavoidable impact not previously identified in the PEIR.

Operation

Impact C-NO-2: Cumulative traffic increases of the proposed project, in combination with reasonably foreseeable future projects, could cause a substantial permanent increase in ambient noise levels in the project vicinity, but the proposed project would not contribute considerably. (Less than Significant)

Future growth from cumulative development including the implementation of City College facilities master plan projects would increase traffic volumes on the local roadway network, primarily Frida Kahlo Way and City College North. As discussed in the approach to cumulative analysis, although City College adopted a facilities master plan in March 2019, this facilities master plan does not provide adequate information to develop a quantitative cumulative impact analysis as part of this Balboa Reservoir SEIR. Therefore, this cumulative analysis is a qualitative analysis

[185] The "Ambient + 10 dBA" limit is based on the measured daytime Leq of 57 dBA at ST-1, which was located at the southern setback of Archbishop Riordan High School.

that considers the information available about growth and development at City College's Ocean Campus at this point in time.

As shown in Table 3.C-11, project contributions along these study area roadways would be 1.8 dBA or less and would not result in a substantial permanent increase in ambient noise levels. However, the potential increase in ambient noise levels from City College's Ocean Campus, in combination with the proposed project options, is unknown. For the purposes of a more conservative analysis, the addition of vehicle trips generated by the proposed project options in combination with the City College facilities master plan projects and other cumulative developments is expected to increase ambient noise levels and those level could exceed 5 dBA. As a result, the proposed project options, in combination with cumulative projects, could result in a significant cumulative substantial permanent increase in ambient noise levels impact given the uncertainty of City College's contribution. However, the project options contributions to potential increases in roadside noise levels at 1.8 dBA would be well below human perceptibility and would not be cumulatively considerable. Therefore, cumulative noise impacts due to increases in traffic would be ***less than significant***.

Comparison of Impact C-NO-2 to PEIR Impact Analysis

Traffic noise increases were identified as less than significant in the PEIR, and no mitigation measures were required for the Year 2025 future baseline with project scenarios. The above analysis is consistent with this finding on a cumulative analysis level. Therefore, the project would result in no new or substantially more severe significant impacts related to construction noise than was previously identified in the PEIR.

Impact C-NO-3: Cumulative mechanical equipment noise of the proposed project, in combination with reasonably foreseeable future projects, could cause a substantial permanent increase in ambient noise levels in the project vicinity, but the proposed project would not contribute considerably. (Less than Significant with Mitigation)

As discussed above under Impact C-NO-1, the facilities master plan identifies two structures on the east basin: the Performing Arts Education Center located west of Frida Kahlo Way, approximately 300 feet from the Balboa Reservoir project site and approximately 300 feet from the closest existing sensitive receptors to the north; and the East Basin Parking Structure located west of Frida Kahlo Way, adjacent to the project site and approximately 80 feet from the closest existing sensitive receptors. The facilities master plan remains the latest adopted plan for City College and is, thus, considered the best available information as of the time of this Draft SEIR publication. The East Basin Parking Structure would not be expected to have mechanical equipment and therefore would not cumulatively contribute to equipment noise from the proposed project.

Implementation of Mitigation Measure M-NO-3 would reduce potential project-level impacts of more than 5 dBA above ambient noise levels with respect to mechanical equipment noise of the proposed project. For any mechanical equipment associated with the Performing Arts Center building would be subject to a less stringent threshold of 8 dBA above ambient levels. Because the size and location of equipment associated with the facilities master plan projects are unknown, the proposed project options, in combination with cumulative projects could result in a significant noise impact related to mechanical equipment. However, the project's impacts would be less than significant with implementation of Mitigation Measure M-NO-3. Therefore, the proposed project's contribution would not be cumulatively considerable and the cumulative noise impact from mechanical equipment would be ***less than significant with mitigation***.

Comparison of Impact C-NO-3 to PEIR Impact Analysis

The PEIR did not contain an analysis of cumulative operational noise impacts from fixed mechanical sources. The proposed project would have a less-than-significant impact through implementation of Mitigation Measure M-NO-3. Therefore, the project would result in no new or substantially more severe impacts related to operational noise impacts from fixed mechanical sources than was previously identified in the PEIR.

3.D Air Quality

3.D.1 Introduction

This section discusses the existing air quality conditions in the project area, presents the regulatory framework for air quality management, and analyzes the potential for the proposed project to affect existing air quality conditions, both regionally and locally; including impacts from emissions generated on a temporary basis from construction activities as well as those generated over the long term from operation of the proposed project. The analysis determines whether those emissions are significant under applicable air quality standards and identifies feasible mitigation measures for significant adverse impacts. This section also includes an assessment of potential odor impacts and an analysis of cumulative air quality impacts. Greenhouse gas (GHG) emissions resulting from the proposed project's operations and the consequent impacts on climate change are addressed in subsequent environmental impact report (SEIR) Appendix B, Initial Study. Supplemental air quality information supporting the analysis in this section is provided in SEIR Appendix E, Air Quality Technical Memorandum.

The analysis in this section is based on a review of existing air quality conditions in the Bay Area region and air quality regulations administered by the U.S. Environmental Protection Agency (U.S. EPA), the California Air Resources Board (CARB), and the Bay Area Air Quality Management District (BAAQMD or air district). This analysis includes methodologies identified in the current BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines[186] and its companion documentation.

3.D.2 Summary of Comments Received in Response to the Notice of Preparation

Comments requested that the EIR study air quality impacts on surrounding areas from the increased vehicle traffic and from construction. Construction impacts are described and analyzed under Impacts AQ-1, p. 3.D-43; AQ-2a, p. 3.D-44; AQ-2b, p. 3.D-56; and AQ-4, p. 3.D-65. Operational air quality impacts are analyzed under Impacts AQ-3, p. 3.D-62; AQ-5, p. 3.D-80; and AQ-6, p. 3.D-87.

3.D.3 Summary of Balboa Park Station Area Plan Air Quality Section

Balboa Park Station Area Plan PEIR Setting

The air quality setting for the Balboa Park Station Area Plan (area plan) discussed in the Balboa Park Station Area Plan Program EIR (area plan PEIR, or PEIR) differs from the existing setting today in terms of air quality conditions, the regulatory environment, and in the level of available information with respect to health risks and hazards. Specifically, at the time of the PEIR, localized

[186] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act Air Quality Guidelines*, updated May 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en*, accessed February 12, 2019.

concentrations of criteria air pollutants were higher than what are monitored today as many of the regulatory improvements implemented since then have improved air quality conditions. As an example, the PEIR reported that particulate emission standards were regularly exceeded in San Francisco. Since 2007, the effect of regulatory changes has resulted in a reduction in the number of violations of the particulate matter standard despite subsequent strengthening (i.e., more health protective) of the ambient particulate standards.

In 2008 when the PEIR was certified, BAAQMD had published CEQA Air Quality Guidelines; however, those guidelines differed substantially from the BAAQMD guidelines published in 2010, 2012, and 2017, and used in this SEIR. For example, the earlier guidelines did not recommend quantification of construction-related emissions of criteria pollutants, nor did they provide guidance for the assessment of *diesel particulate matter* (DPM) and localized fine particulate matter impacts from construction on localized receptors which are now components of the District's 2017 Guidelines. Additionally, the District's suggested air quality thresholds of significance for ozone precursors are now more stringent than in its 1999 Guidelines, being reduced from 80 pounds per day to 54 pounds per day.

Another aspect of the setting that has changed since the December 2008 certification of the PEIR is the number of sensitive receptors that now exist in the area. The development projects at 1100 and 1150 Ocean Avenue have located residential uses to the area south of the project site.

Balboa Park Station Area Plan PEIR Impacts and Mitigation Measures

Air quality impacts assessed in the PEIR included four subareas totaling over 100 acres analyzed in the area plan. The PEIR identified significant and unavoidable with mitigation impacts from (1) fugitive dust emissions associated with construction activities, (2) operational vehicle emissions of particulate matter (PM_{10}), and (3) exposure of proposed residents of the area plan to potentially unhealthful concentrations of DPM and odors. PEIR Mitigation Measure AQ-1 was identified to ensure that contractors spray all sites with water during demolition, excavation, and construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep surrounding streets during demolition, excavation, and construction at least once per day to reduce particulate emissions. PEIR Mitigation Measure AQ-1 was identified to ensure that construction-related air quality impacts would be less than significant. No mitigation measures were identified in the PEIR for the significant impact from operational vehicle emissions of particulate matter (PM_{10}). Although the PEIR stated that traffic generated by all Tier 1 and Tier 2 projects would exceed the BAAQMD's PM_{10} threshold in 2025, the PEIR concluded that because the Area Plan would be consistent with the BAAQMD's recommended strategies for reducing VMT, and because traffic-related PM_{10} emissions are directly correlated with VMT, trip lengths (and therefore VMT) would be reduced. The PEIR Findings of Fact document identified no significant impacts associated with traffic-related PM_{10} emissions.

PEIR Mitigation Measure AQ-2 was identified to ensure that residential development proposed in the following areas shall include an analysis of $PM_{2.5}$ and shall, if warranted, incorporate upgraded ventilation systems to minimize exposure of future residents to fine particulate matter (which includes

DPM) and odors: (1) within 500 feet of the I-280 freeway; (2) adjacent to the proposed bus layover facility on the Phelan Loop Site; (3) any active recreation areas such as playgrounds that are proposed as part of any future residential development in either of these areas; and (4) any other location where total daily traffic volumes from all roadways within 500 feet of such location exceed 100,000 vehicles. The PEIR stated that the Phelan Loop Site Project (now 1100 Ocean Avenue) may result in a potentially significant impact, though health risks would decline over time and the impact could be reduced to a less-than-significant level through the installation of upgraded ventilation systems in residential units as required by PEIR Mitigation Measure AQ-2. The PEIR also stated that PEIR Mitigation Measure AQ-2 would "help reduce exposure of future residents within the project area to elevated pollutant levels," but "whether this measure reduces these effects to a less-than-significant level cannot be determined because actual exposure would vary from one resident to another, depending on their length of exposure." However, the PEIR Findings of Fact document identified no significant impacts associated with health risks. Regarding odors, the installation of upgraded ventilation systems as required PEIR Mitigation Measure AQ-2 would reduce potential odor impacts to less than significant.

The plan-level impact analysis conducted in the PEIR assessed the consistency of population increases from development under the entire proposed plan with the growth assumptions of the applicable Clean Air Plan at the time, the *2005 Ozone Strategy*. This analysis found that the plan's population growth rate would not exceed the estimated growth rate of vehicle miles travelled in San Francisco at that time and therefore identified a less-than-significant impact.

3.D.4 Environmental Setting

Climate and Meteorology

The project site is in the San Francisco Bay Area Air Basin. Air quality in the basin is influenced by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. The air basin's moderate climate steers storm tracks away from the region for much of the year, although storms often affect the region from November through April. San Francisco's proximity to the onshore breezes stimulated by the Pacific Ocean provides generally very good air quality in the city and at the project site.

Annual temperatures in the project area average in the mid-50s (degrees Fahrenheit), ranging from the low 40s on winter mornings to the mid-70s during summer afternoons. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby 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 varies widely from year to year as shifts in the annual storm track of a few hundred miles can mean the difference between a very wet year and drought conditions.

Atmospheric conditions such as wind speed and direction, and variable air temperatures interact with the physical features of the landscape to influence the movement and dispersal of air pollutants, regionally. The project site is within the Peninsula climatological subregion. Marine air traveling through the Golden Gate is a dominant weather factor affecting dispersal of air pollutants within the region. The prevailing wind direction on the San Francisco mainland is from the west at an average annual wind speed of 10.3 miles per hour.[187] At higher temperatures ozone formation can increase.

Ambient Air Quality – Criteria Air Pollutants

As required by the 1970 Federal Clean Air Act, U.S. EPA initially identified six air pollutants that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. U.S. EPA calls these pollutants "criteria air pollutants" and 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 U.S. EPA. Later, subsets of PM were identified and permissible levels were established. These include *PM of 10 microns in diameter or less* (PM_{10}) and *PM of 2.5 microns in diameter or less* ($PM_{2.5}$).

BAAQMD has jurisdiction to regulate air quality within the nine-county San Francisco Bay Area Air Basin. Accordingly, 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, Summary of San Francisco Air Quality Monitoring Data (2013–2017)**, presents a five-year summary for 2013 to 2017 of the highest annual criteria air pollutant concentrations, recorded at the air quality monitoring station operated and maintained by the air district at 16th and Arkansas streets, approximately 1 mile northwest of the project site. It also compares these concentrations with the most stringent applicable ambient air quality standards (whether state or federal). As attainment with air quality standards is determined on a basinwide basis, it is possible for the basin to be in attainment with state or federal standards for a given pollutant notwithstanding an exceedance for a given pollutant standard at a local monitoring station. Concentrations shown in bold indicate only a localized exceedance of that standard.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following pollutants are regulated by the U.S. EPA and are subject to emissions control requirements adopted by federal, state and local regulatory agencies. As noted above, these pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, which have been adopted for them. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for each of the criteria air pollutants and their effects on health are summarized in the Draft SEIR (Table 3.D-2, p. 3.D-12). It must be noted that the ambient air quality standards—both federal and state—are expressed as airborne concentrations of various pollutants. Compliance with the standards is on a regional basis. In the Bay Area, compliance is demonstrated by ongoing measurements of pollutant concentrations at more than 30 air quality monitoring stations operated by the BAAQMD in all nine Bay Area counties. An exceedance of an ambient air quality standard at any one of the stations counts as a regional exceedance.

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187 Western Regional Climate Center, Website query, Prevailing Wind Direction in California, *https://wrcc.dri.edu/Climate/west_lcd_show.php?iyear=2008&sstate=CA&stag=sanfrancisco&sloc=San+Francisco*, accessed February 12, 2019.

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[a]				
		2013	2014	2015	2016	2017
Ozone						
Maximum 1-Hour Concentration (ppm)	>0.09[b]	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[c]	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[b]	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[b]	1.4	1.2	1.3	1.1	1.4
Days 8-Hour Standard Exceeded		0	0	0	0	0
Suspended Particulates (PM_{10})						
Maximum 24-Hour Concentration (µg/m^3)	>50[b]	44	36	47	29	**77**
Monitoring Days 24-Hour Standard Exceeded[d]		0	0	0	0	2
Suspended Particulates ($PM_{2.5}$)						
Maximum 24-Hour Concentration (µg/m^3)	>35[c]	**49**	33	35	20	**50**
Days 24-Hour Standard Exceeded		2	0	0	0	7
Annual Average (µg/m^3)	>12[b,c]	10.1	7.7	7.6	7.5	9.7
Nitrogen Dioxide (NO_2)						
Maximum 1-Hour Concentration (ppm)	>0.100[c]	0.07	0.08	0.07	0.06	0.07
Days 1-Hour Standard Exceeded		0	0	0	0	0

SOURCE: Bay Area Air Quality Management District (BAAQMD), Bay Area Air Pollution Summary, 2013–2017, *http://www.baaqmd.gov/about-air-quality/air-quality-summaries*, accessed February 12, 2019.

NOTES:

Bold values are in excess of applicable standard.

ppm = parts per million; µg/m^3 = micrograms per cubic meter

a Number of days exceeded is for all days in a given year, except for PM_{10}. PM_{10} has been monitored every 12 days effective January 2013.
b State standard, not to be exceeded.
c Federal standard, not to be exceeded.
d Based on a sampling schedule of approximately 30 samples per year for PM_{10}. All other pollutants are monitored continuously, including $PM_{2.5}$.

NAAQS and CAAQS have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. As explained by the CARB, "An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment."[188] That is, if a region is in compliance with the ambient air quality standards, its regional air quality can be considered protective of public health. The NAAQS are statutorily required to be set by the U.S. EPA at levels that are "requisite to protect the public health," 42 U.S.C. section 7409(b)(1).[189] Therefore, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

A brief description of the health effects of exposure to criteria air pollutants is provided below.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving *reactive organic gases* (ROGs, also sometimes referred to as *volatile organic compounds* [VOCs] by some regulatory agencies) and *oxides of nitrogen* (NOx) in the presence of sunlight.

The main sources of ROG and NOx, 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.

Ground-level ozone is the main component of smog. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NOx. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours.

Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NOx under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

According to the U.S. EPA, ozone can cause the muscles in the airways to constrict potentially leading to wheezing and shortness of breath.[190] Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more

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188 CARB, "California Ambient Air Quality Standards (CAAQS)" webpage, last updated August 10, 2017, *https://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm*, accessed July 20, 2019.

189 See *https://www.law.cornell.edu/uscode/text/42/7409*.

190 U.S. EPA, Health Effects of Ozone Pollution, 2018, *https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution*, last updated October 10, 2018, accessed January 8, 2019; U.S. EPA, Sulfur Dioxide (SO_2) Pollution, last updated April 2, 2019, *https://www.epa.gov/so2-pollution/sulfur-dioxide-basics*, accessed May 5, 2019.

susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease.[191] Long-term exposure to ozone is linked to aggravation of asthma, and is likely to be one of many causes of asthma development and long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children.[192] According to the CARB, inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath.[193] The U.S. EPA states that people most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers.[194] Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure.[195] According to CARB, studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults.[196] Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures.[197] Further research may be able to better distinguish between health effects in children and adults.[198]

According to published data, and as shown in Table 3.D-1, p. 3.D-5, the most stringent applicable standards for ozone (state one-hour standard of 0.09 parts per million [ppm] and the federal eight-hour standard of 0.075 ppm) were not exceeded in San Francisco between 2013 and 2017. In 2015, U.S. EPA strengthened the eight-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 the 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. High CO concentrations develop

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191 U.S. EPA, Health Effects of Ozone Pollution, 2018, *https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution*, last updated October 10, 2018, accessed January 8, 2019; U.S. EPA, Sulfur Dioxide (SO_2) Pollution, last updated April 2, 2019, *https://www.epa.gov/so2-pollution/sulfur-dioxide-basics*, accessed May 5, 2019.

192 U.S. EPA, Health Effects of Ozone Pollution, 2018, *https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution*, last updated October 10, 2018, accessed January 8, 2019; U.S. EPA, Sulfur Dioxide (SO_2) Pollution, last updated April 2, 2019, *https://www.epa.gov/so2-pollution/sulfur-dioxide-basics*, accessed May 5, 2019.

193 CARB, Ozone & Health, Health Effects of Ozone, 2019, *https://ww2.arb.ca.gov/resources/ozone-and-health*, accessed May 5, 2019.

194 U.S. EPA, Health Effects of Ozone Pollution, 2018, *https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution*, last updated October 10, 2018, accessed January 8, 2019; U.S. EPA, Sulfur Dioxide (SO_2) Pollution, last updated April 2, 2019, *https://www.epa.gov/so2-pollution/sulfur-dioxide-basics*, accessed May 5, 2019.

195 U.S. EPA, Health Effects of Ozone Pollution, 2018, *https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution*, last updated October 10, 2018, accessed January 8, 2019; U.S. EPA, Sulfur Dioxide (SO_2) Pollution, last updated April 2, 2019, *https://www.epa.gov/so2-pollution/sulfur-dioxide-basics*, accessed May 5, 2019.

196 CARB, Ozone & Health, Health Effects of Ozone, 2019, *https://ww2.arb.ca.gov/resources/ozone-and-health*, accessed May 5, 2019.

197 CARB, Ozone & Health, Health Effects of Ozone, 2019, *https://ww2.arb.ca.gov/resources/ozone-and-health*, accessed May 5, 2019.

198 CARB, Ozone & Health, Health Effects of Ozone, 2019, *https://ww2.arb.ca.gov/resources/ozone-and-health*, accessed May 5, 2019.

primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. Unlike other criteria pollutants, whose effects are regional, CO impacts are evaluated locally. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO hotspots.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. At very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness and death.[199] Very high levels of CO are not likely to occur outdoors; however, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease since these people already have a reduced ability for getting oxygenated blood to their hearts and are especially vulnerable to the effects of CO when exercising or under increased stress.[200] In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina.[201] According to CARB, the most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain.[202] For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance.[203] Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO.[204]

Table 3.D-1, p. 3.D-5, also shows that the more stringent state CO standards were not exceeded between 2013 and 2017. Measurements of CO indicate hourly maximums ranging between 8 and 13 percent of the more stringent state standard, and maximum eight-hour CO levels that are approximately 12 to 16 percent of the allowable eight-hour standard.

Particulate Matter

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from human-made and natural sources. Particulate matter is measured in two size ranges: PM_{10} and $PM_{2.5}$. In the Bay Area, motor vehicles generate about one-half of the San Francisco Bay Area Air Basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood

199 U.S. EPA, Carbon Monoxide (CO) Pollution in Outdoor Air, last updated September 8, 2016, *https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution*, accessed January 8, 2019.

200 U.S. EPA, Carbon Monoxide (CO) Pollution in Outdoor Air, last updated September 8, 2016, *https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution*, accessed January 8, 2019.

201 U.S. EPA, Carbon Monoxide (CO) Pollution in Outdoor Air, last updated September 8, 2016, *https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution*, accessed January 8, 2019.

202 CARB, Carbon Monoxide & Health, 2019, *https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health*, accessed May 5, 2019.

203 CARB, Carbon Monoxide & Health, 2019, *https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health*, accessed May 5, 2019.

204 CARB, Carbon Monoxide & Health, 2019, *https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health*, accessed May 5, 2019.

burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health.

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 CARB, 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." Studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children."[205] CARB also reports that statewide attainment of PM 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.[206] Among the criteria air pollutants that are regulated, particulates appear to represent a serious ongoing health hazard. As long ago as 1999, BAAQMD 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.

Compelling evidence suggests that $PM_{2.5}$ is by far the most harmful air pollutant in the Bay Area air in terms of the associated impact on public health. A large body of scientific evidence indicates that both long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health effects (e.g., aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardiovascular symptoms, and contributing to heart attacks and deaths).[207] $PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways, especially people who live within 500 feet of freeways or high-traffic roadways, have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children.[208] According to CARB, both PM_{10} and $PM_{2.5}$ can be inhaled, with some depositing throughout the airways.[209] PM_{10} is more likely to deposit on the surfaces of the larger airways of the upper region of the lung while $PM_{2.5}$ is more likely to travel into and deposit on the surface of the deeper parts of the lung, which can induce tissue damage, and lung inflammation.[210] Short-term (up to 24 hours duration) exposure to PM_{10} has been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits. The

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205 CARB, *Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution*, November 2007, p. 1.
206 CARB, *Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution*, November 2007, p. 1.
207 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.
208 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.
209 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.
210 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.

effects of long-term (months or years) exposure to PM_{10} are less clear, although studies suggest a link between long-term PM_{10} exposure and respiratory mortality and the International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer.[211] Short-term exposure to $PM_{2.5}$ has been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days and long-term exposure to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children.[212] According to CARB, populations most likely to experience adverse health effects with exposure to PM_{10} and $PM_{2.5}$ include older adults with chronic heart or lung disease, children, and asthmatics.[213] Children and infants are susceptible to harm from inhaling pollutants such as PM_{10} and $PM_{2.5}$ compared to healthy adults because they inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems.[214]

As presented in Table 3.D-1, p. 3.D-5, the state 24-hour PM_{10} standard was exceeded on two monitored occasions between 2013 and 2017 in San Francisco. It may conservatively be 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, and the state 24-hour $PM_{2.5}$ standard was exceeded on nine monitored occasions between 2013 and 2017.[215] The federal and state annual average standards were not exceeded between 2013 and 2017.

Nitrogen Dioxide

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are its main sources. 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 one-hour standard for NO_2 (0.18 ppm) is being met in San Francisco.

NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as NOx. A precursor to ozone formation, NOx is produced by fuel combustion in motor vehicles, stationary sources such as industrial activities, ships, aircraft, and rail transit. Typically, NOx emitted from fuel combustion is in the form of nitric oxide and NO_2. Nitric oxide is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere.

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211 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.

212 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.

213 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.

214 CARB, Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}), last reviewed August 10, 2017, *https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm*, accessed January 8, 2019.

215 PM_{10} is sampled every 12th day; therefore, actual days over the standard may have been up to 12 times the numbers listed in the table. $PM_{2.5}$ is continuously monitored.

The principle form of NOx produced by combustion is nitric oxide, but nitric oxide reacts quickly in the atmosphere to form NO_2, creating the mixture of nitric oxide and NO_2 referred to as NOx.[216] Major sources of NOx include emissions from cars, trucks and buses, power plants, and off-road equipment.[217] The terms NOx and NO_2 are sometimes used interchangeably. However, the term NOx is typically used when discussing emissions, usually from combustion-related activities, and the term NO_2 is typically used when discussing ambient air quality standards. Where NOx emissions are discussed in the context of the thresholds of significance or impact analyses, the discussions are based on the conservative assumption that all NOx emissions would oxidize in the atmosphere to form NO_2.

According to the U.S. EPA, NO_2 can potentially irritate airways in the human respiratory system.[218] Short-term exposures can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms and longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. According to CARB, controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics.[219] In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses.[220] Infants and children are particularly at risk from exposure to NO_2 because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration while in adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease.[221] CARB states that much of the information on distribution in air, human exposure and dose, and health effects is specifically for NO_2 and there is only limited information for nitric oxide and NOx, as well as large uncertainty in relating health effects to nitric oxide or NOx exposure.[222]

In 2010, U.S. EPA implemented the current one-hour NO_2 standard (0.10 ppm), which is presented in **Table 3.D-2, State and Federal Ambient Air Quality Standards and Attainment Status for the San Francisco Bay Area Air Basin**. Currently, the San Francisco Bay Area Air Basin is designated as an attainment area for the NO_2 standard.[223] As shown in Table 3.D-1, p. 3.D-5, this new federal standard was not exceeded at the San Francisco station between 2013 and 2017.

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216 CARB, Nitrogen Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health*, accessed May 5, 2019.

217 U.S. EPA, 2016. Nitrogen Dioxide (NO_2) Pollution. Available: *https://www.epa.gov/no2-pollution/basic-information-about-no2*, last updated September 8, 2016. Accessed January 8, 2019.

218 U.S. EPA, 2016. Nitrogen Dioxide (NO_2) Pollution. Available: *https://www.epa.gov/no2-pollution/basic-information-about-no2*, last updated September 8, 2016. Accessed January 8, 2019.

219 CARB, Nitrogen Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health*, accessed May 5, 2019.

220 CARB, Nitrogen Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health*, accessed May 5, 2019.

221 CARB, Nitrogen Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health*, accessed May 5, 2019.

222 CARB, Nitrogen Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health*, accessed May 5, 2019.

223 U.S. EPA, Nitrogen Dioxide Designations June 2017, *https://www.epa.gov/nitrogen-dioxide-designations/2010-nitrogen-dioxide-standards-state-recommendations-and-epa*, accessed February 12, 2019.

TABLE 3.D-2
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE SAN FRANCISCO BAY AREA AIR BASIN

		State (SAAQS[a])		Federal (NAAQS[b])	
Pollutant	**Averaging Time**	**Standard**	**Attainment Status**	**Standard**	**Attainment Status**
Ozone	1-hour	0.09 ppm	**N**	NA	See Note c
	8-hour	0.070 ppm	**N**	0.070 ppm[d]	**N**/Marginal
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	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	0.075 ppm	A
	24-hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM_{10})	24-hour	50 µg/m^3	**N**	150 µg/m^3	U
	Annual[e]	20 µg/m^3 [f]	**N**	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24-hour	NA	NA	35 µg/m^3	**N**
	Annual	12 µg/m^3	**N**	12 µg/m^3	U/A
Sulfates	24-hour	25 µg/m^3	A	NA	NA
Lead	30-day	1.5 µg/m^3	A	NA	NA
	Cal. Quarter	NA	NA	1.5 µg/m^3	A
	Rolling 3-month average	NA	NA	0.15	U
Hydrogen Sulfide	1-hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8-hour	See Note g	U	NA	NA

SOURCES: BAAQMD, Standards and Attainment Status, 2017, *http://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status*, accessed February 12, 2019; U.S. EPA, National Ambient Air Quality Standards, 2016, *https://www.epa.gov/criteria-air-pollutants/naaqs-table*, accessed February 12, 2019.

NOTES:

A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter

a SAAQS = state ambient air quality standards (California). SAAQS for ozone, CO (except Lake Tahoe), SO_2 (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.

b 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 three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM_{10} standard is attained when the three-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 three-year average of the 98th percentile is less than the standard.

c U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005.

d This Federal 8-hour ozone standard was approved by U.S. EPA in October 2015 and became effective on December 28, 2015.

e State standard = annual geometric mean; national standard = annual arithmetic mean.

f In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

g 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.

The U.S. 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 commenced operation in March 2015, and the Berkeley station commenced operation in July 2016. The new monitoring data may result in a need to change area designations in the future. CARB will revise the area designation recommendations, as appropriate, once sufficient 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 acute and chronic respiratory disease.[224] SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM_{10} and $PM_{2.5}$) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain. In the Bay Area, high concentrations of SO_2 are only a concern in areas close to refinery operations. According to the U.S. EPA, short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult.[225] According to CARB, health effects at levels near the State one-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath and chest tightness, especially during exercise or physical activity.[226] Exposure at elevated levels of SO_2 (above 1 ppm) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.[227] Children, the elderly, and those with asthma, cardiovascular disease, or chronic lung disease (such as bronchitis or emphysema) are most likely to experience the adverse effects of SO_2.[228,229] Pollutant trends suggest that the San Francisco Bay Area Air Basin currently meets and will continue to meet the state standard for SO_2 for the foreseeable future.

Lead

Lead has a range of adverse neurotoxic health effects, and was formerly released into the atmosphere primarily via the combustion of leaded gasoline. The phase-out of leaded gasoline in California resulted in decreasing levels of atmospheric lead. In the Bay Area, high concentrations of lead are only a concern in areas close to general aviation airports. Lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system, and affects the oxygen carrying capacity of blood.[230] The lead effects most commonly encountered in current populations are neurological effects in children, such as

[224] BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en*, accessed February 12, 2019.
[225] CARB, Sulfur Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health*, accessed May 5, 2019.
[226] CARB, Sulfur Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health*, accessed May 5, 2019.
[227] CARB, Sulfur Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health*, accessed May 5, 2019.
[228] CARB, Sulfur Dioxide & Health, 2019, *https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health*, accessed May 5, 2019.
[229] U.S. EPA, Sulfur Dioxide (SO_2) Pollution, last updated April 2, 2019, *https://www.epa.gov/so2-pollution/sulfur-dioxide-basics*, accessed May 5, 2019.
[230] U.S. EPA, 2017. Lead Air Pollution. Available: https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution, last updated November 29, 2017. Accessed January 8, 2019.

behavioral problems and reduced intelligence, anemia, and liver or kidney damage.[231] Excessive lead exposure in adults can cause reproductive problems in men and women, high blood pressure, kidney disease, digestive problems, nerve disorders, memory and concentration problems, and muscle and joint pain.[232]

Air Quality Index

The U.S. EPA developed the Air Quality Index scale to make the public health impacts of air pollution concentrations easily understandable. The index, much like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500. The numbers in the scale are divided into six color-coded ranges, with numbers 0 through 500 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 limiting 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.
- Maroon (301–500) indicates air quality is "hazardous." This would trigger health warnings of emergency conditions, and the entire population is more likely to be affected.

The Air Quality Index numbers refer to specific amounts of pollution in the air. They are based on the federal air quality standards for ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the index chart. Thus, if the concentration of any of these pollutants rises above its respective standard, the air quality can be unhealthy for the public. In determining the air quality forecast, local air districts, including BAAQMD, use the anticipated concentration measurements for each of the major pollutants, convert them into index numbers, and determine the highest index for each zone in a district.

Readings below 100 on the Air Quality Index scale would not typically affect the health of the general public. Levels above 300 rarely occur in the United States. Index statistics over recent years indicate that air quality in the Bay Area is predominantly in the "Good" or Moderate" categories and is 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 13 days between the years 2013 and 2017. The October 2017 fires in Northern California resulted in the federal 24-hour $PM_{2.5}$ standard being exceeded on up to seven days just in the first part of the

231 CARB, Lead & Health, 2019, *https://ww2.arb.ca.gov/resources/lead-and-health*, accessed May 5, 2019.
232 CARB, Lead & Health, 2019, *https://ww2.arb.ca.gov/resources/lead-and-health*, accessed May 5, 2019.

month of October 2017 in certain counties.[233] Northern California fires in November and December of 2018 resulted in violations of the federal 24-hour $PM_{2.5}$ standard, although data for 2018 have yet to be tabulated by CARB and BAAQMD. Even though the air district's data have not been validated yet, these levels of $PM_{2.5}$ in many counties have been the highest levels recorded in recent times. As a result, the index in several neighboring counties reached the "very unhealthy" designation, ranging from values of 201 to 300. During that period, the air district issued "Spare the Air" alerts and recommended that individuals stay inside with windows closed and refrain from significant outdoor activity. While these wildfires were extraordinary events, they appear to be occurring with increasing frequency in the Bay Area (since 2000, 15 of the state's 20 largest and most destructive wildfires on record have occurred).[234]

As shown in **Table 3.D-3, Air Quality Index Statistics for the San Francisco Bay Area Air Basin**, the basin had a total of 15 orange-level (unhealthy for sensitive groups) days in 2013, 11 days in 2014, 19 days in 2015, 13 days in 2016, and nine days in 2017. Between 2013 and 2017, the air basin experienced a total of 13 red-level (unhealthy) days and in 2017, three purple-level (very unhealthy) days, the latter of which was likely caused by the October 2017 Northern California fires.

TABLE 3.D-3
AIR QUALITY INDEX STATISTICS FOR THE SAN FRANCISCO BAY AREA AIR BASIN

Air Quality Index Statistics for San Francisco Bay Area Air Basin	Number of Days by Year				
	2013	2014	2015	2016	2017
Unhealthy for Sensitive Groups (Orange)	15	11	19	13	9
Unhealthy (Red)	1	1	0	2	9
Very Unhealthy (Purple)	0	0	0	0	3

SOURCE: BAAQMD, 2018.

Toxic Air Contaminants and Local Health Risks and Hazards

In addition to criteria air pollutants, individual projects may emit *toxic air contaminants* (TACs). TACs collectively refer to a diverse group of air pollutants that may cause chronic (i.e., of 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. Thus, 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 are not subject to ambient air quality standards but are regulated by BAAQMD using a risk-based approach to determine which sources and which pollutants to control as well as the degree of control. A *health risk assessment* is an analysis that estimates human health exposure to toxic substances, and when considered together with

[233] BAAQMD, Air Monitoring Data, *http://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data?DataViewFormat=monthly&DataView=tech&StartDate=10/24/2017&Parameter=316*, accessed February 12, 2019.
[234] Cal Fire, *Incident Information*, January 2019, *http://cdfdata.fire.ca.gov/incidents/incidents_statsevents*, accessed April 2019.

information regarding the toxic potency of the substances, a health risk assessment provides quantitative estimates of health risks.[235]

Exposures to fine PM ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and poor lung development in children, and other health effects, such as hospitalization for cardiopulmonary disease.[236] DPM, a byproduct of diesel fuel combustion, is also of concern. CARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.[237] 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 most adversely affected by sources of TACs and elevated concentrations of particulate matter, the City and County of San Francisco partnered with BAAQMD to inventory and assess air pollution exposure from vehicles, stationary sources, and area sources within San Francisco. Citywide dispersion modeling was conducted using AERMOD[238] to assess the emissions from the following primary sources: vehicles on local roadways, permitted stationary sources, port and maritime sources, and diesel emissions from Caltrain. Emissions of PM_{10} (DPM is assumed equivalent to PM_{10}), $PM_{2.5}$, and total organic gases (TOGs) were modeled on a 20 by 20–meter receptor grid covering the entire city. The citywide modeling results represent a comprehensive assessment of existing cumulative exposures to air pollution throughout the city. The methodology and technical documentation for modeling citywide air pollution are available in the document entitled, *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*.[239]

Model results were used to identify areas in the city with poor air quality, which are designated as the *Air Pollutant Exposure Zone* (APEZ), based on the following health-protective criteria: (1) cumulative $PM_{2.5}$ concentrations greater than 10 $\mu g/m^3$ and/or (2) excess cancer risk from the contribution of emissions from all modeled sources greater than 100 per one million persons exposed. See below for evidence supporting these standards.

An additional health vulnerability layer was incorporated in the APEZ for those San Francisco ZIP codes in the worst quintile of Bay Area Health Vulnerability scores (ZIP Codes 94102, 94103, 94105, 94124, and 94130). In these areas, the standard for identifying areas as being within the zone were lowered to: (1) excess cancer risk from the contribution of emissions from all modeled sources

235 In general, a health risk assessment is required if BAAQMD 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 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.

236 San Francisco Department of Public Health, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008.

237 CARB, Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines," October 1998.

238 AERMOD is the U.S. EPA's preferred or recommended steady state air dispersion plume model. For more information on AERMOD and to download the AERMOD Implementation Guide, *https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models*, accessed February 12, 2019.

239 BAAQMD, San Francisco Department of Public Health, and San Francisco Planning Department, *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*, December 2012.

greater than 90 per one million persons exposed and/or (2) cumulative $PM_{2.5}$ concentrations greater than 9 μg/m^3.

Lastly, all parcels within 500 feet of a major freeway were also included in the APEZ, consistent with findings in CARB's Air Quality and Land Use Handbook: A Community Health Perspective, which suggests air pollutant levels decrease substantially at approximately 500 feet from a freeway.[240]

Citywide modeling results identified that the project site is not located within the APEZ, including it is not located within a health vulnerable zip code. The closest parcels to the project site within the APEZ are those within 500 feet of I-280 bounded by Howth Street, Ocean Avenue, and Geneva Avenue, located approximately 1,300 feet to the southeast of the project site.

Fine Particulate Matter

In April 2011, U.S. EPA published Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards (Particulate Matter Policy Assessment). In this document, U.S. EPA staff concluded that the then-current federal annual $PM_{2.5}$ standard of 15 μg/m^3 should be revised to a level within the range of 13 to 11 μg/m^3, with evidence strongly supporting a standard within the range of 12 to 11 μg/m^3. The APEZs for San Francisco are based on the health protective $PM_{2.5}$ standard of 11 μg/m^3, as supported by the U.S. EPA's Particulate Matter Policy Assessment, although lowered to 10 μg/m^3 to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

Excess Cancer Risk

The 100 per one million persons exposed (100 excess cancer risk) criterion discussed above in the "San Francisco Modeling of Air Pollution Exposure Zones" section is based on U.S. EPA guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[241] As described by BAAQMD, U.S. EPA considers a cancer risk of 100 per one 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,[242] U.S. 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 one 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 million excess cancer cases is also consistent

240 CARB, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005, *http://www.arb.ca.gov/ch/handbook.pdf*, accessed February 12, 2019.

241 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en*, accessed February 12, 2019.

242 54 *Federal Register* 38044, September 14, 1989.

with the ambient cancer risk in the most pristine portions of the Bay Area based on air district regional modeling.[243]

In addition to monitoring criteria pollutants, both BAAQMD and CARB 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 traditionally have been found in the highest concentrations in ambient air and therefore tend to produce the most significant risk. The nearest air district ambient TAC monitoring station to the project area is the station at 10 Arkansas Street in San Francisco. The ambient concentrations of carcinogenic TACs measured at the Arkansas Street station, approximately 3 miles northeast of the project site, are presented in **Table 3.D-4, 2017 Annual Average Ambient Concentrations of Carcinogenic Toxic Air Contaminants Measured at BAAQMD Monitoring Station, 10 Arkansas Street, San Francisco**. The estimated cancer risk from a lifetime exposure (70 years) to these substances is also reported in the table. 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 Bay Area as a whole. Therefore, the estimated average lifetime cancer risk resulting from exposure to TAC concentrations monitored at the San Francisco station do not appear to be any greater than for the Bay Area as a region.

TABLE 3.D-4
2017 ANNUAL AVERAGE AMBIENT CONCENTRATIONS OF CARCINOGENIC TOXIC AIR CONTAMINANTS MEASURED AT BAAQMD MONITORING STATION, 10 ARKANSAS STREET, SAN FRANCISCO

Substance	Concentration	Cancer Risk per Million[a]
Gaseous TACs (ppb)		
Acetaldehyde	0.69	10
Benzene	0.216	56
1,3-Butadiene	0.036	39
Carbon Tetrachloride[b]	0.093	71
Formaldehyde	1.64	35
Perchloroethylene	0.009	1
Methylene Chloride	0.114	1
Chloroform	0.028	2
Trichloroethylene	0.010	0.3
Particulate TACs (ng/m³)		
Chromium (Hexavalent)[b]	0.078	32
Total Risk for All TACs		**248.3**

SOURCE: CARB, Ambient Air Toxics Summary – 2016, *http://www.arb.ca.gov/adam/toxics/sitesubstance.html*, accessed February 12, 2019.

NOTES:

TACs = toxic air contaminants; ppb = part per billion; ng/m^3 = nanograms per cubic meter

[a] Cancer risks were estimated by applying published unit risk values to the measured concentrations.
[b] 2016 data provided for this substance as 2017 data was insufficient per CARB.

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243 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

Roadway-Related Pollutants

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions contain diverse forms of particles and gases, and vehicles also contribute to particulates by generating road dust and tire wear. Epidemiologic studies have demonstrated that people living close to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and poor 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 PM and NO_2. In traffic-related studies, the additional noncancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 300 feet.[244] As a result, CARB recommends that new sensitive land uses not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day. The project site is not located within 500 feet of such a freeway or roadway.

Diesel Particulate Matter

CARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The board estimated that as of 2000, the average Bay Area cancer risk from exposure to DPM, based on a population-weighted average ambient DPM concentration, is approximately 480 in one million, which is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The statewide risk from DPM as determined by the board declined from 750 in one million in 1990 to 570 in one million in 1995; by 2012, the board estimated the average statewide cancer risk from DPM at 520 in one million.[245,246]

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent 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.[247] 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 board recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. The board notes that these recommendations are advisory and should not be interpreted as defined "buffer zones," and that local agencies must balance other considerations,

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244 CARB, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005. *http://www.arb.ca.gov/ch/handbook.pdf*, accessed February 12, 2019.

245 CARB, *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*, accessed February 12, 2019.

246 CARB, Overview: Diesel Exhaust and Health, *https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health*, accessed May 5, 2019. This calculated cancer risk value from ambient air exposure in California can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which for men is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the American Cancer Society. (American Cancer Society, last revised October 1, 2014, *http://www.cancer.org/cancer//lifetime-probability-of-developing-or-dying-from-cancer*.)

247 Pollution Engineering, *New Clean Diesel Fuel Rules Start*, July 2006.

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, CARB'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.[248]

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. More sensitive population groups include: the elderly and the young; those with higher rates of respiratory disease, such as asthma and chronic obstructive pulmonary disease; and those with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. The air district defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, daycare centers, hospitals, and senior-care facilities. Workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.[249]

The proximity of sensitive receptors to motor vehicles is an air pollution concern, especially in San Francisco where building setbacks are limited and roadway volumes are higher than most other parts of the Bay Area. Vehicles also contribute to particulates by generating road dust and through tire wear.

Existing sensitive receptors evaluated in this SEIR include a representative sample of known residents (child and adult) in the surrounding neighborhood, and other sensitive receptors (school children, daycare facilities, etc.) located in the surrounding community and along the expected travel routes of the on-road delivery and haul trucks within the project vicinity. The health risk impact analysis in this document also includes receptor locations out to a distance of 3,280 feet (1,000 meters) from the project site, consistent with citywide health risk modeling discussed above. In addition to the residential receptors, 10 schools and 16 daycare facilities within 3,280 feet of the project site were identified.

The project site is not located within an area with risk factors that meet the APEZ criteria. Background cancer risk values on the project site range from 8 to 22 in one million, with background values ranging from 1 to 139 in one million within 3,280 feet (1,000 meters) of the site. Background $PM_{2.5}$ concentrations range from 8.3 to 8.6 $\mu g/m^3$ on the project site, with background values varying between 8.1 and 11.3 $\mu g/m^3$ within 3,280 feet (1,000 meters) of the site. The nearest offsite receptors within an APEZ are located approximately 1,100 feet to the southeast and are so designated due to the proximity of I-280. Receptors within 3,280 feet (1,000 meters) of the project boundary are located both within and outside of the APEZ and impacts are assessed accordingly as discussed below in the "Approach to Analysis" section.

248 CARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, *http://www.arb.ca.gov/ch/.pdf*, accessed February 12, 2019.
249 BAAQMD, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May 2011, p. 12.

Existing Stationary Sources of Air Pollution

BAAQMD's inventory of permitted stationary sources of emissions shows seven permitted stationary emission facilities present within or near the 1,000-foot zone of influence[250] of the project site. The sources at these permitted facilities include three stationary diesel engines for power generators, three gas stations, and fugitive TAC sources for the San Francisco Municipal Railway at 2301 San Jose Avenue.[251]

Major Roadways Contributing to Air Pollution

Ocean Avenue and Geneva Avenue are arterial roadways within 3,280 feet (1,000 meters) of the project site that carry at least 10,000 vehicles in annual average daily traffic based on the City's SF-CHAMP roadway model.[252] This traffic contributes to concentrations of $PM_{2.5}$, DPM, and other air contaminants emitted from motor vehicles near the street level. I-280 is also located within 3,280 feet (1,000 meters) from the project site. Aside from the surrounding major roadways, there are no other areas of mobile-source activity or otherwise "non-permitted" sources (e.g., railyards, trucking distribution facilities, and high-volume fueling stations) located within 3,280 feet (1,000 meters) of the project site.

3.D.5 Regulatory Framework

Federal Regulations

The 1970 Clean Air Act (last 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 are planned to 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 ample margin of safety) to which the public can be exposed without adverse health effects. They are designed in consideration of 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 without the risk of adverse health effects.

The current attainment status for the San Francisco Bay Area Air Basin, with respect to federal standards, is summarized in Table 3.D-2, p. 3.D-12. In general, the basin experiences low concentrations of most pollutants when compared to federal standards, except for ozone and PM (PM_{10} and $PM_{2.5}$), for which standards are exceeded periodically (see Table 3.D-1, p. 3.D-5).

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[250] For assessing community risks and hazards, a 1,000-foot radius is recommended around the project property boundary. BAAQMD recommends that any proposed project that includes the siting of a new source or receptor assess associated impacts within 1,000 feet, taking into account both individual and nearby cumulative sources. As explained above, the HRA evaluated sources within a larger area of 3,280 feet (1,000 meters).

[251] Fugitive TAC sources include spray booths for transit vehicle repair, graffiti removal chemicals, a burnout oven, and automotive cleaning chemicals for transit vehicles.

[252] San Francisco County Transportation Authority, Chained Activity Modeling Process version 4.3.0, Average Daily Traffic Volumes, provided to ESA, August 2, 2012.

State Regulations

California Clean Air Act

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 sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological conditions in California, there is considerable diversity between the state and national ambient air quality standards, as shown in Table 3.D-2, p. 3.D-12. California ambient standards are 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, required the designation of areas as in attainment or in nonattainment, but based these designations on state ambient air quality standards rather than the federal standards. As indicated in Table 3.D-2, p. 3.D-12, the San Francisco Bay Area Air Basin is designated as “nonattainment” for state ozone, PM_{10}, and $PM_{2.5}$ standards, and is designated as “attainment” for the other pollutants.

Toxic Air Contaminants

In 2005, CARB 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 their engines on more than 30 seconds before beginning to depart from a school. Also, state law Senate Bill 352 was adopted in 2003 and limits locating public schools within 500 feet of a freeway or busy traffic corridor (Education Code section 17213; Public Resources Code section 21151.8).

Title 24 (Building Energy-Efficiency Standards)

California Code of Regulations title 24 is the means by which California regulates energy consumption. Title 24, Building Energy-Efficiency Standards, applies to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and nonresidential buildings. The Title 24 standards, first adopted by the California Energy Commission in 1978, are updated periodically to incorporate new energy efficiency technologies and methods.

The California Green Building Standards Code was adopted as part of Title 24 in 2008 and was last updated in 2016. The code establishes voluntary standards for planning and design for energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, sustainable site development, and internal air contaminants.

The project sponsor is including sustainability elements within its sustainability plan addressing renewable energy considerations. The project would, at minimum, comply with the state's Title 24 energy efficiency requirements and the state Green Building Requirements (discussed below).

In May 2018, the California Energy Commission adopted its triennial (2019) update to the California Energy Code (title 24 Building Energy-Efficiency Standards, part 6). The updated standards were published in December 2018, and will be effective January 1, 2020.[253] The 2019 Energy Standards focus on three key areas: residential photovoltaic systems, residential and nonresidential ventilation requirements, and nonresidential lighting requirements. For ventilation, the updates will increase air filtration requirements to a *Minimum Efficiency Reporting Value* (MERV) of 13, necessary for filtering out the smallest category of potentially harmful particulates. This filtration requirement applies to all habitable spaces in high-rise residential buildings,[254] hotel/motel buildings, and nonresidential buildings other than healthcare facilities that are mechanically heated or mechanically cooled.

The filtration requirement reduces indoor exposure to particulate matter including DPM and thus will reduce cancer risk to occupants of applicable buildings for which an application for a building permit or renewal of an existing permit is filed after January 1, 2020.

California Green Buildings Standards Code (CALGreen)

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 California Code of Regulations, part 11) was adopted as part of the California Building Standards Code (California Code of Regulations title 24). The 2013 California Green Building Standards Code, also known as the CALGreen Code, contains mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools and hospitals) throughout California. The development of the CALGreen Code is intended to reduce energy and water consumption, reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impacts during and after construction. As it pertains to the Project, the CALGreen Code influences the Project's natural gas use for heating and cooking and, therefore, the criteria pollutant emissions associated with natural gas combustion.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy efficient appliances, renewable energy, graywater systems, water efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, stormwater management, building design, insulation, flooring, and framing, among others.

[253] California Energy Commission, *2019 Building Energy Efficiency Standards*, 2019, *https://www.energy.ca.gov/title24/2019standards/*, accessed June 2019.
[254] A high-rise residential building is defined as a building, other than a hotel/motel, of Occupancy Group R-2 or R-4 with four or more habitable stories.

Regional Regulations

Bay Area Air Quality Management District

BAAQMD is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin, which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties and portions of Sonoma and Solano counties. It is responsible for attaining and maintaining federal and state air quality standards in the basin. Specifically, it monitors ambient air pollutant levels throughout the basin and develops and implements strategies to attain these standards. It also establishes and enforces local air quality rules and regulations for these purposes. A list of some of the applicable air district rules is provided below:

- **Regulation 2, Rule 2 (New Source Review):** This regulation contains requirements for best available control technology and emissions offsets.
- **Regulation 2, Rule 5 (New Source Review of TACs):** This regulation outlines guidance for evaluating TAC emissions and their potential health risks.
- **Regulation 6, Rule 1 (Particulate Matter):** This regulation restricts emissions of particulate matter darker than No. 1 on the Ringlemann Chart to less than three minutes in any one hour.
- **Regulation 7 (Odorous Substances):** This regulation establishes general odor limitations on odorous substances and specific emissions limitations on certain odorous compounds.
- **Regulation 8, Rule 3 (Architectural Coatings):** This regulation limits the quantity of VOCs in architectural coatings.
- **Regulation 9, Rule 6 (NOx emissions from natural gas–fired boilers and water heaters):** This regulation limits emissions of NOx generated by natural gas–fired boilers.
- **Regulation 9, Rule 8 (Stationary Internal-Combustion Engines):** This regulation limits emissions of NOx and CO from stationary internal-combustion engines of more than 50 horsepower (hp).
- **Regulation 11, Rule 2 (Hazardous Pollutants):** This regulation limits emissions of asbestos during demolition, renovation, milling, and manufacturing and establishes appropriate waste disposal procedures.

Per its *Engineering Policy and Procedure Manual*,[255] the air district requires implementation of best available control technology for toxics and would deny an authority to construct or a permit to operate for any new or modified source of TACs that exceeds a cancer risk of 10 in 1 million or a chronic or acute hazard index of 1.0. The permitting process under the air district regulation 2, rule 5 requires a health risk screening analysis, the results of which are posted on the air district's website.

Bay Area Air Quality Planning Relative to State and Federal Standards

Federal Air Quality Plan

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

[255] BAAQMD, *Permit Handbook*, 2018, p. 15, *http://www.baaqmd.gov/~/media/files/engineering/permit-handbook/baaqmd-permit-handbook.pdf*, accessed February 12, 2019.

nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard). The most recent Bay Area ozone plan prepared in response to federal air quality planning requirements is the 2001 Ozone Attainment Plan.

California Air Quality Plan

Bay Area plans addressing state standards are prepared with the cooperation of BAAQMD, the Metropolitan Transportation Commission (MTC), and the Association of Bay Area Governments (ABAG). In April 2017, the air district adopted the *2017 Clean Air Plan*[256] whose primary goals are to protect public health and to protect the climate. The plan includes a wide range of proposed control measures to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. The *2017 Clean Air Plan* updates the *Bay Area 2010 Clean Air Plan* and complies with state air quality planning requirements as codified in the California Health and Safety Code. The San Francisco Bay Area Air Basin is designated nonattainment for both the one- and eight-hour state ozone standards. In addition, emissions of ozone precursors in the basin contribute to air quality problems in neighboring air basins. Under these circumstances, state law requires the Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and to reduce the transport of ozone precursors to neighboring air basins.

The 2017 Clean Air Plan contains 85 measures to address reduction of several pollutants: ozone precursors, particulate matter, air toxics, and/or GHGs. Other measures focus on a single type of pollutant, potent GHGs such as methane and black carbon, or harmful fine particles that affect public health. These control strategies are grouped into the following categories:

- Stationary Source Measures;
- Transportation Control Measures;
- Energy Control Measures;
- Building Control Measures;
- Agricultural Control Measures;
- Natural and Working Lands Control Measures;
- Waste Management Control Measures;
- Water Control Measures; and
- Super-GHG Control Measures.

[256] BAAQMD, *Final 2017 Clean Air Plan: Spare the Air, Cool the Climate*, 2017, *http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf*, accessed on February 12, 2019.

Local Regulations

San Francisco General Plan

The San Francisco General Plan includes the 1997 Air Quality Element.[257] The plan objectives are as follows:

- **Objective 1:** Adhere to State and Federal air quality standards and regional programs.
- **Objective 2:** Reduce mobile sources of air pollution through implementation of the Transportation Element of the General Plan.
- **Objective 3:** Decrease the air quality impacts of development by coordination of land use and transportation decisions.
- **Objective 4:** Improve air quality by increasing public awareness regarding the negative health effects of pollutants generated by stationary and mobile sources.
- **Objective 5:** Minimize particulate matter emissions from road and construction sites.
- **Objective 6:** Link the positive effects of energy conservation and waste management to emission reductions.

San Francisco Construction Dust Control Ordinance

The City of San Francisco has adopted San Francisco Health Code article 22B and San Francisco Building Code section 106.A.3.2.6, which together are the Construction Dust Control Ordinance. 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 San Francisco Department of Building Inspection. For projects larger than 0.5 acre, the Construction Dust Control Ordinance requires that the project sponsor submit a dust control plan for approval by the San Francisco Department of Public Health prior to issuance of a building permit by San Francisco Department of Building Inspection or Port of San Francisco.

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, section 1100 et seq. of the San Francisco Public Works Code. The project site is 17.6 acres in size, and therefore the project sponsor would be required to prepare a dust control plan.

[257] San Francisco Planning Department, *San Francisco General Plan*, Air Quality Element, July 1997, updated in 2000.

San Francisco Health Code Provisions for Urban Infill Development (Article 38)

San Francisco adopted article 38 of the San Francisco Health Code in 2008, with revisions that took effect in December 2014. The revised code requires that sensitive land use developments within the mapped APEZ incorporate MERV 13–equivalent ventilation systems to remove particulates from outdoor air. This regulation also applies to conversion of uses to a sensitive use (residential, senior care facilities, daycare centers, etc.). The project site is not currently identified as within an APEZ.[258] See Impact AQ-4, p. 3.D-65, for more information on the background of health risks on the project site.

3.D.6 Impacts and Mitigation Measures

Significance Criteria

San Francisco Administrative Code chapter 31 directs the department to identify environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G. As it relates to air quality, Appendix G asks whether the proposed project would:

- 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;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

Approach to Analysis

Air quality analysis conducted for this impact assessment employs the emission factors, models and tools distributed by a variety of agencies including CARB, the California Air Pollution Officers Association (CAPCOA), the California Office of Environmental Health Hazard Assessment (OEHHA) and U.S. EPA. Additionally, the analysis includes methods identified in the BAAQMD *CEQA Air Quality Guidelines* (May 2017).

Project Features

This SEIR analyzes two different sets of options for the site's residential density to capture a range of possible development on the project site: The first is the Developer's Proposed Option (1,100 dwelling units), proposed by Reservoir Community Partners LLC. The second is the Additional Housing Option (1,550 dwelling units), developed by the City to fulfill the objectives of the San Francisco General Plan (the general plan) to maximize affordable housing and housing in transit-rich neighborhoods. Development under each of the two options would entail the same land uses and street configurations, and similar site plans. Each of the two project options have an effect on the quantity and timing of criteria pollutant emissions and health risks, as discussed in "Methods for Analysis of Impacts," p. 3.D-29.

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[258] San Francisco Department of Public Health, Air Pollution Exposure Zone Map, Inset 5, *https://www.sfdph.org/dph/files/EHSdocs/AirQuality/AirPollutantExposureZoneMap.pdf*, accessed February 12, 2019.

Construction Activities

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction workers' vehicle trips, truck hauling trips, and vendor truck trips. In addition, fugitive dust emissions would result from site disturbance including grading and asphalt recycling, and fugitive ROG emissions would result from application of architectural coatings and paving.

Mobile equipment such as excavators, graders, backhoes, loaders, dump trucks, compactors, pavers, man lifts, and forklifts would be used for demolition, site clearing, excavation and grading, but also for building construction, and/or hardscape and landscape materials installation. Track/tire-mounted cranes and/or tower cranes would be used for building construction, including but not limited to, steel and precast erection, and building façades. Miscellaneous stationary equipment would include generators, air compressors, and cement/mortar mixers, and possibly crushing and processing equipment. A variety of other smaller mechanical equipment would also be used at the project site during the construction period, such as jackhammers/pavement breakers, saw cutters, chopping saws, tile saws, stud impact guns, impact drills, torque wrenches, welding machines, and concrete boom pumps. The proposed project would not require pile driving or specialized compaction techniques for imported soil.[259]

Project construction would also generate offsite truck trips for deliveries of concrete and other building materials, transportation of construction equipment to and from the site, hauling soils and debris from the site, and street sweepers.

Project Operations, Stationary Sources, and Transportation Sources

The proposed project would generate operational emissions from a variety of sources, including stationary sources (diesel emergency generators); area sources (natural gas combustion for heating and cooking, consumer products, architectural coatings, and landscape equipment); and from mobile sources (daily automobile and truck trips). Key operational elements of the proposed project that could directly or indirectly result in air quality impacts include the following:

- Traffic increases associated with long-term development of 3,163 vehicle trips per day in the Developer's proposed Option and 4,442 trips per day under the Additional Housing Option.[260]
- Operation of emergency standby diesel generators) would introduce new stationary emissions sources.[261]
- Combustion of natural gas for heating and cooking.
- Other area sources including consumer products, architectural coatings, and landscape equipment.
- Travel and idling emissions associated with daily delivery and service vehicle trips.

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259 Rockridge Geotechnical, *Draft Preliminary Geotechnical Investigation Proposed Residential Development at Balboa Reservoir Phelan and Ocean Avenues, San Francisco, California*, prepared for BRIDGE Housing Corporation, January 22, 2018.

260 Kittelson & Associates, *Travel Demand Memorandum*, April 29, 2019, Table 6.

261 It is assumed that there would be two emergency generators for the Developer's Proposed Option and six for the Additional Housing Option. They would be tested for 50 hours per year (consistent with BAAQMD permitting limits), which is roughly equivalent to four hours per month. They would be located in the building basements and their emissions would be ventilated at street-level and a minimum of 50 feet from the property line.

Additional information on operational emissions sources is provided in the "Methods for Analysis of Impacts," p. 3.D-29, and also in Appendix E, Air Quality Technical Memorandum.

Transportation Demand Management Plan

The proposed project would include a transportation demand management (TDM) program that would implement measures to reduce vehicle trips and encourage sustainable modes of transportation. The TDM program may include both physical (e.g., bicycle and car-share parking) and programmatic (e.g., incentives) measures. The TDM program would reduce operational air pollutant emissions by reducing the number of vehicle trips that would otherwise be generated by the project. However, the impact of the TDM program was not quantified in this SEIR due to a lack of certainty as to effectiveness of the trip reduction measures, and criteria pollutant emissions reflect the scenario without implementation of the TDM program.

Towards the goal of achieving a sustainable land use development, the TDM program would prioritize pedestrian and bicycle access and implement measures to encourage alternative modes of transportation. Onsite childcare and affordable housing would be among the features of the TDM program. Sustainable modes of transportation would be encouraged through building a walkable, mixed-use, transit-oriented development, encouraging bicycling and walking, and reduced parking ratios for residential uses. Sidewalk and streetscapes would be designed to prioritize safety for pedestrians and bicyclists.

Key strategies in the TDM plan include improved walking conditions and bike lanes, unbundled parking, car-share parking, and other approaches to discourage use of single-occupant private vehicles. See the additional discussion of the TDM plan in SEIR Section 3.B, Transportation and Circulation.

Methods for Analysis of Impacts

In general, the proposed project would result in two types of air quality impacts. First, the project would result in air pollution through construction activity. Second, the project would generate air pollutants during project operations, due to increased vehicle travel and new stationary sources (i.e., new diesel emergency generators). This section describes the methods used to evaluate project impacts related to consistency with the Clean Air Plan, emissions of criteria pollutants, and local health risks and hazards.

Each of these categories of project impacts would result in: (1) impacts from criteria air pollutant emissions, which are generally regional in nature, and (2) impacts associated with exposure to TACs and $PM_{2.5}$, which is a localized health impact expressed in terms of exposure to $PM_{2.5}$ annual average concentrations and the probability of contracting cancer per 100 in one million persons exposed to TAC concentrations. The assessment of criteria air pollutant impacts addresses the second and third bulleted significance criteria identified above. The assessment of localized health risk and exposure to $PM_{2.5}$ concentrations addresses the fourth bulleted significance criterion identified above.

With respect to odors, the assessment method used is the screening distance approach. The BAAQMD's 2017 CEQA Guidelines provide guidance, in the form of screening distances, to help evaluate potential odor impacts. They identify potential odor sources of particular concern, such as wastewater treatment plants, oil refineries, asphalt plants, chemical manufacturing, painting/coating operations, coffee roasters, food processing facilities, recycling operations, and metal smelters, and recommend buffer zones around them to avoid potential odor conflicts.

Air quality analysis conducted for this impact assessment uses the emission factors, models, and tools distributed by a variety of agencies including CARB, the California Air Pollution Control Officers Association, the California Office of Environmental Health Hazard Assessment (March 2015), and U.S. EPA. Additionally, the analysis uses methods identified in BAAQMD's *CEQA Air Quality Guidelines* (May 2017). While the air district is currently developing an update to its *CEQA Air Quality Guidelines*, which may or may not include changes to its recommended thresholds of significance, no draft has yet been made public and therefore this analysis applies the most recent guidance available.

In the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015,[262] the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, except where the project would significantly exacerbate an existing environmental condition. Accordingly, the significance criterion above related to exposure of sensitive receptors to substantial pollutant concentrations are valid only to the extent that the project significantly exacerbates the air quality conditions. An impact is considered significant if the project would significantly exacerbate existing or future air quality conditions.

Air Quality Plan

The applicable air quality plan is BAAQMD's 2017 Clean Air Plan. Consistency with the Clean Air Plan can be determined if the project supports the goals of the plan, includes applicable control measures from the plan and would not disrupt or hinder implementation of any plan control measures. Consistency with the Clean Air Plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan, the first bulleted significance criterion identified above.

Criteria Air Pollutants

As described above under Regulatory Framework, the air basin experiences low concentrations of most pollutants when compared to federal or state standards and is designated as either in attainment or unclassified for most criteria pollutants, with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which these pollutants are designated as non-attainment for either the State or federal standards.

By definition, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in nonattainment of air quality standards. Instead, a project's individual emissions are considered to contribute to the existing, cumulative air quality conditions. If a project's contribution to cumulative air quality conditions is considerable, then the project's impact on air quality would be considered significant.[263]

262 *California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal.4th 369. Opinion Filed December 17, 2015.
263 BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017.

Table 3.D-5, Criteria Air Pollutant Thresholds, identifies criteria air pollutant significance thresholds followed by a discussion of each threshold. Projects that would result in criteria pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants within the air basin.

TABLE 3.D-5
CRITERIA AIR POLLUTANT THRESHOLDS

Pollutant	Construction Thresholds Average Daily Emissions (pounds per day)	Operational Thresholds: Average Daily Emissions (pounds per day)	Operational Thresholds: Maximum Annual Emissions (tons per year)
ROG	54	54	10
NOx	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not applicable	

SOURCE: BAAQMD, *CEQA Air Quality Guidelines*, May 2017, *www.baaqmd.gov*.

The thresholds of significance for criteria air pollutants are based on substantial evidence presented in Appendix D of the 2017 BAAQMD *CEQA Air Quality Guidelines* and the district's 2009 *Revised Draft Options and Justification Report* concerning CEQA thresholds.[264]

The significance thresholds are based on the state and federal Clean Air Acts' emissions limits for stationary sources. To ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD 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 NOx, the offset emissions level is an annual average of 10 tons per year (or 54 pounds per day).[265] These levels represent emissions below which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants that could result in increased health effects.

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. For PM_{10} and $PM_{2.5}$, the emissions limit under the New Source Review program 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 a significant impact on air quality.[266]

[264] BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 2-2; BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 17.
[265] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 17.
[266] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 16.

Although these regulations apply to new or modified stationary sources, land use development projects also generate ROG, NOx, PM_{10}, and $PM_{2.5}$ emissions from increases in vehicle trips, energy use, architectural coating, and construction activities. Therefore, the identified thresholds are applied to the construction and operational phases of land use projects. Those projects that would result in emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ozone precursors or PM.

As discussed above, the proposed project includes two project options: the Developer's Proposed Option and the Additional Housing Option. Criteria pollutant emissions were estimated for each option at the same level of detail to inform the public and decision makers about the potential air quality impacts of each option.

Fugitive dust 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,[267] and individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[268] BAAQMD has identified eight BMPs to control fugitive dust emissions from construction activities.[269] 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. The project would be subject to the Construction Dust Control Ordinance, which is the basis for determining the significance of air quality impacts from fugitive dust emissions.

Construction Emissions of Criteria Air Pollutants

Mass average daily and annual combustion criteria pollutant and off-gassing emissions[270] were estimated using the emission factors from CARB's OFFROAD and EMission FACtors 2017 (EMFAC2017) model.[271,272] Emissions were evaluated consistent with the methodology used by the California Emissions Estimator Model (CalEEMod) (version 2016.3.2), an emissions estimation/evaluation model that was developed in collaboration with the air quality management districts of California. CalEEMod separates the construction process into multiple phases to account for various construction scenarios, including demolition, site preparation, grading, building, architectural coating, and paving phases. From these construction phases, CalEEMod estimates emissions from the following sources:

- Off-road equipment;
- On-road mobile vehicle trips associated with workers, vendors and hauling;
- Fugitive dust emissions (PM_{10} and $PM_{2.5}$) associated with demolition, excavation and grading, truck loading and entrained road dust; and

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267 Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, September 7, 2006, *wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf*, accessed April 23, 2018.

268 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 27.

269 BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2011, p. 8-3.

270 For example, evaporative emissions of ROG from the application of architectural coatings and asphalt paving.

271 CARB, *EMFAC2017*, Version 1.0.2, effective March 1, 2018, *https://www.arb.ca.gov/msei/msei.htm*, accessed February, 2018.

272 While CARB has published updated EMFAC2017 emission factors in December 2017, these updated factors have not yet been approved by U.S. EPA. Refer to SEIR Appendix E for a technical memorandum on the ramifications of using the latest U.S. EPA-approved model.

- ROG emissions associated with application of architectural coatings (paints and finishes) and paving.

Total construction emissions by phase were calculated and converted from tons per year to pounds per day using the estimated construction duration of each phase of construction for comparison against the significance thresholds. As there would be an overlap of construction and operational activities and variations in the duration of construction activities for each phase, estimated emissions are compared to both the average daily and maximum annual thresholds in Table 3.D-7a, p. 3.D-45, and Table 3.D-7b, p. 3.D-46. Refer to Appendix E, Air Quality Technical Memorandum, for a detailed list of project-specific equipment considered and duration assumptions.

During the project's approximately six-year construction period, construction activities would result in emissions of ozone precursors and PM, as discussed below. Because operation of Phase 1 is anticipated to occur during construction of Phase 2, the construction analysis accounts for Phase 1 operational emissions that would occur simultaneously with construction of Phase 2. Therefore, operational emissions are evaluated after each of the two phases of construction and upon buildout of each phase using the CalEEMod model. This allows for an analysis of the total emissions that would occur from construction activities and simultaneous operations during the six-year construction period.

The emissions estimates provided in this analysis are based on generally conservative assumptions, including the expectation that a relatively large amount of construction takes place during a relatively intensive and overlapping schedule. Because of this conservative assumption, actual average daily or maximum annual emissions could be less than those estimated in this analysis. However, it is also possible that construction could occur over a shorter duration with more intensive activity. In the extreme case, construction could occur over a three-year period with Phases 1 and 2 occurring simultaneously. In this scenario, average daily or maximum annual emissions could be greater than those estimated in this analysis, and total annual emissions could increase.

The construction schedule and phasing were based on project-specific data provided by the project sponsor. It was assumed that the Developer's Proposed Option and Additional Housing Option would have similar schedules and phasing. Off-road equipment for each phase was based on project-specific data provided by the applicant. A separate off-road construction equipment fleet was not provided by the sponsor for the Additional Housing Option. Consequently, to estimate off-road construction emissions from the Additional Housing Option, a scaling factor was applied to the daily off-road equipment operational hours for the Developer's Proposed Option equipment fleet. The scaling factor was based on the square footage ratio of the Developer's Proposed Option to the Additional Housing Option for each building (for example, Building C in Phase 1 would be 171,000 square feet under the Developer's Proposed Option and 219,000 square feet under the Additional Housing Option, so the scaling factor for construction equipment operating during Building C construction is 219,000 ÷ 171,000 = 1.28). Therefore, the Additional Housing Option is anticipated to result in greater criteria pollutant emissions during construction. A complete list of the construction equipment for each phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included in Appendix E, Air Quality Technical

Memorandum. The assessment of construction air quality impacts considers each of the following emissions sources:

- Off-road construction vehicles and equipment (including generators and the asphalt recycling plant);
- Asphalt paving;
- Application of architectural coatings; and
- On-road vehicles (travel and idling).

Sources one through three were analyzed using CalEEMod methods, as described above. For on-road vehicles, travel emissions were also analyzed using CalEEMod. Idling emissions from on-road vehicles, including haul trucks, were estimated using emission factors from the EMFAC2017 model.[273]

See Appendix E, Air Quality Technical Memorandum, for additional detail regarding the construction emissions modeling, including detailed construction schedule and equipment fleet, vendor and haul truck travel assumptions, and architectural coating adjustments.

Operational Emissions of Criteria Air Pollutants

Mass average daily and annual mobile and area source emissions were estimated using the CalEEMod (version 2016.3.2) emissions model. CalEEMod quantifies emissions from operational activities based on the project land use types and user-defined inputs for project location, operational year, and climate zone.

The project would generate operational emissions from a variety of sources, including stationary sources (diesel emergency generators); area sources (natural gas combustion in stoves and fireplaces in the townhomes, consumer products, architectural coatings, and landscape equipment); and from mobile sources (daily automobile and truck trips). Potential emissions from emergency diesel generators (stationary sources) were estimated based on emissions limits established for new stationary emergency standby diesel-fueled internal combustion engines in CARB's Airborne Toxic Control Measure for Stationary Compression Ignition Engines final regulation for model year 2008 and newer engines of 300 hp or greater and under 600 hp.[274] It was conservatively assumed that each building higher than 75 feet would require an emergency diesel generator. This is conservative because emergency diesel generators are only required if the top floor level is higher than 75 feet and the buildings under both proposed options are unlikely to meet this criterion. The Developer's Proposed Option would have two buildings greater than 75 feet, and therefore it was assumed that there would be two emergency diesel generators for this option. The Additional Housing Option would have six buildings greater than 75 feet, and therefore it was assumed that there would be six emergency diesel generators for this option. All emergency generators would be 300 kilowatts (kW) or 400 hp, per information provided by the project sponsor. Specifications for generators is not available but it is assumed that generators

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[273] CARB, EMFAC2017, Version 1.0.2, effective March 1, 2018, *https://www.arb.ca.gov/msei/msei.htm*, accessed February 2018.

[274] CARB, *Final Regulation Order: Airborne Toxic Control Measure for Diesel Particulate Matter From Portable Engines Rated At 50 Horsepower And Greater*, February 11, 2011, *https://www.arb.ca.gov/portable/perp/perpatcm.pdf*, accessed January 2019.

would operate a maximum of 50 hours per year (consistent with emergency standby engine testing limits established in BAAQMD regulation 9-8-330.3). Project operational emissions of criteria pollutants from mobile sources, stationary sources (backup generators), and area sources are summed to determine total operational emissions.

Area-source and energy emissions were calculated using the CalEEMod model based on the type and size of land uses associated with the proposed project, including the estimated number of residents. Other area sources are consumer products, architectural coatings, and landscaping equipment. San Francisco County-specific consumer product emission rate data[275] were used in the CalEEMod model to estimate daily VOC emissions. Total area source emissions depend on square footage and the number dwelling units, and are therefore different for the Developer's Proposed Option and the Additional Housing Option.

Mobile-source emissions would result from vehicle trips (auto and truck) associated with the proposed project and were also calculated using the CalEEMod model based on the number of vehicle trips identified in the transportation analysis conducted for the project.[276] The transportation study trip rates are primarily light-duty vehicles but would also include a small percentage of trucks. According to the 2019 San Francisco Transportation Analysis (TIA) Guidelines,[277] 11.3 percent of residential person trips and 0.5 percent of retail person trips are associated with delivery trips at the curb (no trucks are anticipated for the childcare).[278] Of these delivery trips, 11 percent would be made by trucks.[279] Consequently, about 4 percent of total vehicle trips for the project (excluding delivery trips made at the loading docks; see below) would be associated with trucks. Therefore, the CalEEMod default fleet mix was modified to reflect the anticipated fleet mix for the project. The light-duty vehicle fleet, including the light-duty auto (LDA), light-duty trucks 1 (LDT1), and light-duty trucks 2 (LDT2) vehicle categories, was adjusted to represent approximately 96 percent of the total vehicle fleet to exclude the 1 percent truck trips. The remaining CalEEMod truck vehicle types were adjusted to represent approximately 4 percent of the total vehicle fleet. See Appendix E, Air Quality Technical Memorandum, for additional detail regarding the vehicle fleet adjustments.

In addition, emissions associated with daily freight delivery and service vehicle trips to the project's loading docks were estimated outside of CalEEMod using emission factors from EMFAC2017 by vehicle type. The number of daily delivery/service vehicle trips were estimated based on the size of each land use and a truck trip generation rate specific to each land use as specified in the traffic study. These loading dock trips would occur in addition to the vehicle trips discussed above, which only include delivery trips at the curb. Emissions from delivery vehicles at the loading docks were calculated for both travel and idling. Operational emission calculations for

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275 San Francisco's ROG emissions from consumer products in 2008 was 5.30 tons (California Air Resources Board, 2009 *Estimated Annual Average Emissions, San Francisco County, https://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_=2008&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CO&F_CO=38&F_COAB, accessed September 26, 2018)*; and San Francisco's assumed square footage was 703,541,231 square feet. Therefore, the emission factor used was 1.51e-5 lbs/(sq.ft.-day). The total building square footage the City of San Francisco Environmental Planning Department relied upon in this calculation is San Francisco Planning Department 2011 Land Use data.

276 Kittelson & Associates, *Travel Demand Memorandum*, April 29, 2019, Table 6.

277 San Francisco Planning Department, *Transportation Impact Analysis Guidelines*, February 2019, Appendix F, Attachment B: San Francisco Travel Demand Update: Data Collection and Analysis, Table 25 *http://default.sfplanning.org/publications_reports/TIA_Guidelines.pdf*, accessed April 2019.

278 Assumed Place Type 3 for residential and Place Type 2 for retail.

279 Teresa Whinery, Fehr & Peers, e-mail to Wade Wietgrefe, San Francisco Planning, March 13, 2019.

entrained road dust are based on San Francisco-specific silt loadings.[280] Mobile source emissions depend on the number of vehicle trips for the proposed project, which differs for the Developer's Proposed Option and the Additional Housing Option.

A detailed quantification of operations-related criteria air pollutant emissions was conducted for the Developer's Proposed Option and the Additional Housing Option at project build out, year 2027, as well as at the completion of Phase 1 buildings in 2024. The criteria air pollutant significance thresholds reflect when a project would contribute considerably to significant air quality impacts. Operational emissions are added to construction emissions when they would occur concurrently (2024–2027).

See Appendix E, Air Quality Technical Memorandum, for additional detail regarding the operational emissions modeling, including additional modeling assumptions for mobile sources including trip rates and trip lengths, adjustments made to the area source model defaults, emission calculation methods and assumptions for emergency generators, and methods used to calculate emissions from freight/delivery loading dock vehicle trips.

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 basinwide emissions and construction-related CO emissions represent less than 5 percent of the Bay Area total basinwide CO emissions. As discussed previously, the Bay Area is in attainment for both CO and SO_2. Furthermore, the BAAQMD 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). The transportation analysis indicates that the intersection in the project area with the greatest volumes would be at I-280 Northbound Ramps/Geneva Avenue and would range from 2,653 and 2,642 vehicles per hour during the peak morning and evening periods, which is well below the 44,000 vehicles per hour. Therefore, given the Bay Area's attainment status and the limited CO and SO_2 emissions that could result from the project, the project would not result in a cumulatively considerable net increase in CO or SO_2, and quantitative analysis is not required.

Local Health Risks and Hazards

In addition to criteria air pollutants, the proposed project would emit TACs. The project-related impact of toxic substances in soil that may become airborne, such as naturally occurring asbestos, is discussed in initial study Section E.17, Hazards and Hazardous Materials.

As part of this project, a health risk assessment was conducted for the proposed project to estimate health risks from exposures to TACs. The assessment examined sensitive receptors within 3,280 feet (1,000 meters) of the project boundary, used the citywide Community Risk Reduction Plan (CRRP) model to identify existing background risk, included updated locations and emission

[280] CARB, *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust*, revised April 2016.

rates of existing stationary sources provided by the BAAQMD, and updated cancer risk values based on the latest (2015) guidance by OEHHA.

The proposed project would locate new sensitive receptors (primarily residential land uses and a daycare facility) under both of the analyzed scenarios. The entirety of the project site was assessed as a potential sensitive receptor area using a 66-foot (20-meter) receptor grid. Refer to SEIR Chapter 2, Project Description, Figure 2-4, Developer's Proposed Option Site Plan and Height Ranges, p. 2-15, and Figure 2-6, Proposed Additional Housing Option Site Plan and Height Ranges, p. 2-18, for specific locations of proposed onsite residential uses. Exposure assessment guidance assumes that people in residences would be exposed to air pollution 24 hours per day, 350 days per year, for 30 years as the basis for calculating cancer risk in all health risk assessments.[281] Therefore, the air pollutant exposure to residents typically results in the greatest adverse health outcome for all population groups. However, the health risk assessment indicates that daycare receptors could be exposed to greater health risks due to the noncontinuous source characteristics of construction activities and the modeling adjustment factors needed to account for this.

As discussed previously, neither the onsite receptors nor the nearest offsite receptors are located within an area that currently meets the APEZ criteria. For receptors not located in areas that meet the APEZ criteria, a health risk assessment is conducted to determine whether the proposed project would, in combination with other existing sources in the area, result in a given offsite or onsite receptor meeting the APEZ criteria.

The threshold of significance used to evaluate health risks from new sources of TACs associated with the project is based on the potential for the proposed project to substantially affect the extent and severity of the APEZ at sensitive receptor locations. The health protective standards used for determining the APEZ and evidence supporting these standards are discussed in the Setting section above and were developed in consultation with BAAQMD staff as part of the preparation of a Community Risk Reduction Plan.[282] The project site is not within an identified health vulnerable ZIP code; therefore the APEZ criteria for this location is based on: (1) cumulative $PM_{2.5}$ concentrations greater than 10 $\mu g/m^3$, and/or (2) excess cancer risk from the contribution of emissions from all modeled sources greater than 100 per one million population.

For projects that could result in sensitive receptor locations meeting the APEZ criteria that otherwise would not occur without the project, a proposed project that would emit $PM_{2.5}$ concentration above 0.3 $\mu g/m^3$ or result in an excess cancer risk greater than 10.0 per million would be considered a significant impact. The 0.3 $\mu g/m^3$ $PM_{2.5}$ concentration and the excess cancer risk of 10.0 per million persons exposed are the levels below which the BAAQMD considers new sources not to make a considerable contribution to cumulative health risks.[283]

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281 California Environmental Protection Agency (CalEPA), Office of Environmental Health Hazard Assessment, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment*, February 2015, *https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf*, accessed March 26, 2018.

282 San Francisco has prepared a Community Risk Reduction Plan. Extensive modeling has been conducted and is documented in *The San Francisco Community Risk Reduction Plan: Technical Support Documentation.* This modeling provides the technical basis for development of the Community Risk Reduction Plan.

283 BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 2-2.

For projects that could affect sensitive receptor locations that already meet the APEZ criteria without the project, a proposed project that would emit $PM_{2.5}$ concentration above 0.2 μg/m³ or result in an excess cancer risk greater than 7.0 per million would be considered a significant impact. The 0.2 μg/m³ $PM_{2.5}$ concentration and the excess cancer risk of 7.0 per million persons exposed are the levels below which the City considers new sources not to make a considerable contribution to cumulative health risks.[284] For the proposed project, these thresholds apply to offsite receptors that are already located in the APEZ, such as those locations within 500 feet of I-280.

Table 3.D-6, Health Risk Thresholds, presents the health risk thresholds that are applied to the proposed project.

TABLE 3.D-6
HEALTH RISK THRESHOLDS

	Thresholds for Construction and Operation	
Affected Sensitive Receptors	**$PM_{2.5}$ (μg/m³)**	**Excess Cancer Risk (cases per one million population)**
Criteria for sensitive receptor located within the APEZ		
Outside Health Vulnerability ZIP code[a]	10	100
Within Health Vulnerability ZIP code[a]	9.0	90
Project contributions to sensitive receptor locations within the APEZ[b,c]	0.2	9.0
Project contributions to sensitive receptor locations not within the APEZ but brought into the APEZ as a result of the project[c,d]	0.3	10.0

SOURCES: BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 7, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en*, accessed February 2019;
BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 2-2, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en*, accessed February 2019;
San Francisco Department of Public Health, Environmental Health, Planning, Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map, April 9, 2014;
Jerrett, M. et al., *Spatial Analysis of Air Pollution and Mortality in Los Angeles*, Epidemiology, 16:727-736, 2005.

NOTES:

$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; μg/m³ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone

a See Section San Francisco Modeling of Air Pollution Exposure Zone discussion above.
b 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 21 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, 16:727-736, 2005. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7 per million persons exposed.
c San Francisco Department of Public Health, Environmental Health, Planning. 2014. Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map dated April 9, 2014
d BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, 2017.

Health Risk Assessment Methods

A health risk assessment is used to determine if a particular chemical poses a significant risk to human health and, if so, under what circumstances. The assessment prepared for this project focuses on $PM_{2.5}$

284 San Francisco Department of Public Health, Environmental Health, Planning, Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map, dated April 9, 2014.

and TACs because these pose significant health impacts at the local level.[285] The methods for the TAC analysis were based on the most-recent BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards,[286] which recommends the use of the U.S. EPA's AERMOD model.

TAC Concentrations

Consistent with the Community Risk Reduction Plan-Health Risk Assessment (CRRP-HRA), the air toxics analysis evaluated health risks and $PM_{2.5}$ concentrations resulting from the proposed project upon the surrounding community. For the proposed project, this would include construction emissions over the course of buildout, operational traffic (which was assessed using the CRRP-HRA modeling), operational heavy-duty delivery truck travel and idling, and stationary sources (the emergency generators). The methods used to evaluate emissions for the proposed project and cumulative health risk assessment are based on the most recent air district CEQA Guidelines and the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines.[287]

The cancer risk analysis in the health risk assessment for the project is based on DPM concentrations from on- and off-road construction equipment, as well as the operational DPM concentrations from the emergency generators and delivery trucks. Concentrations of TACs from the proposed project construction emissions were estimated using the U.S. EPA's preferred atmospheric dispersion modeling system (AERMOD), as were project-related operational mobile sources (vehicle traffic and delivery vehicles) and stationary sources (emergency generators and delivery trucks). The most-recent version of the American Meteorological Society/U.S. EPA regulatory air dispersion model (AERMOD version 9.6.5) was used to evaluate ambient air concentrations of DPM and $PM_{2.5}$ at on- and offsite receptors.[288]

AERMOD requires a number of inputs including meteorological data. For this project's health risk assessment, BAAQMD's Mission Bay meteorological data for 2008 were used, which aligns with the San Francisco CRRP-HRA Methodology.[289] For detail with regard to terrain and land use considerations, emission rates, source parameters, and risk characterization methods applied in the assessment, please refer to Appendix E, Air Quality Technical Memorandum.

Sensitive Receptors

In order to evaluate health impacts to onsite and offsite receptors, receptors were placed at locations co-located with the receptors used in the CRRP-HRA and within 3,280 feet (1,000 meters) of the project site. Sensitive receptors were modeled at a height of 6 feet (1.8 meters), above terrain height, a default breathing height for ground-floor receptors, consistent with the CRRP-HRA analysis.

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285 BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 5-1.

286 BAAQMD, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May 2012, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en*, accessed April 23, 2018.

287 California State the Office of Environmental Health Hazard Assessment, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, August 2015, *http://www.oehha.ca.gov//hot_spots//.pdf*, accessed April 23, 2018.

288 U.S. EPA, *User's Guide for the AMS/U.S. EPA Regulatory Model – AERMOD*, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina (EPA-454/B-18-001, April 2018), *https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf*, accessed February 2019.

289 BAAQMD, San Francisco Department of Public Health, and San Francisco Planning Department, *The San Francisco Community Risk Reduction Plan: Technical Support Document*, December 2012.

Offsite sensitive receptors were identified based on residential land use and/or zoning, and field confirmation. Parcels that are characterized as "residential" using data from SF OpenData, the City and County of San Francisco's official open data portal[290] as well as onsite locations categorized as residential or those that could potentially be used for residential housing were modeled as sensitive receptors. The project sponsor has indicated that a daycare facility would be located in Block B. Offsite daycare facilities and schools were also identified and modeled. State health risk assessment guidance assumes greater exposure durations for residential receptors than for child care facilities, both of which are assumed to have children present. However, for exposure to construction emissions, since construction represents a noncontinuous source, a modeling adjustment factor was used for daycare and school receptors to determine the long-term average daily concentration the daycare/school receptors may be breathing during their time at daycare and school.[291] This can result in greater health risks to daycare receptors than for residential receptors during construction activities. Consequently, receptors were modeled depending on their specific type (residential, daycare, and school) based on their location.

Exposure Assessment

TAC exposure and resulting health risks were quantified for both the Developer's Proposed Option and the Additional Housing Option. The exposure scenarios analyzed in the health risk assessment include:

Scenario 1. *Construction:* offsite receptors (residents, daycare, and school) evaluated starting when construction commences for Phase 0 and exposed to all construction emissions for Phase 1 and Phase 2.

Scenario 2. *Construction:* onsite receptors (residents and daycare[292]) present at the project site once Phase 1 is complete evaluated starting when construction for Phase 1 concludes and exposed to all Phase 2 construction emissions.

Scenario 3. *Operation:* offsite receptors (residents, daycare, and school) evaluated starting when construction commences and exposed to all construction emissions and 27 years of operational emissions.

Scenario 4. *Operation:* onsite receptors (residents and daycare) present at the project site once Phase 1 is complete evaluated starting when construction for Phase 1 concludes and exposed to all Phase 2 construction emissions and 30 years of operational emissions.

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290 San Francisco City and County, SF OpenData, 2016, *https://data.sfgov.org/*, accessed April 2018.

291 CalEPA, Office of Environmental Health Hazard Assessment, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment*, February 2015, *https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf*, accessed March 26, 2018.

292 It was assumed that daycare receptors would be present at the site when Phase 1 construction is complete and exposed to all Phase 2 construction emissions. Although the project phasing plan indicates that the daycare is part of Phase 2 and would not be occupied until Phase 2 construction is complete (and therefore daycare receptors would not be exposed to any construction emissions), the health risk assessment assumes that daycare receptors would be present when Phase 1 is complete. This results in a highly conservative assessment of daycare risk.

Scenario 5. *Operation:* offsite (residents, daycare, and school) and onsite receptors (residents and daycare) evaluated starting when full buildout operation commences and exposed to 30 years of operational emissions.

Health Risks

Excess lifetime cancer risks were estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor. Estimated excess cancer risks were calculated using the sensitivity factors and breathing rates recommended by the Office of Environmental Health Hazard Assessment.[293]

Children living offsite were assumed to be present at one location during the entire construction period. Other offsite and onsite residents were assumed to be present at one location for 30 years, consistent with the Office of Environmental Health Hazard Assessment guidance.

The health risk assessment evaluated excess cancer risk and $PM_{2.5}$ concentrations as a result of exposure to both construction and operational emissions.

As discussed in the criteria air pollutant analysis section above, the health risk estimates provided in this analysis are based on generally conservative assumptions, including the expectation that a relatively large amount of construction takes place during a relatively intensive and overlapping schedule. Because of this conservative assumption, actual exposure to TACs and resulting health risks could be less than those estimated in this analysis. However, it is also possible that construction could occur over a shorter duration with more intensive activity (e.g., over a three-year period with Phases 1 and 2 occurring simultaneously). In this scenario, although the total exposure to TACs remains the same, more exposure would occur when receptors are younger and thus more susceptible to TAC exposure (i.e., the 3rd trimester and 0-2 age groups show a much higher cancer susceptibility than the 2-9 age groups; the compressed construction scenario would shift more TAC exposure from the 2-9 age group to the 0-2 age group, increasing cancer risk for these receptors). If this were to occur, the health risks at existing offsite sensitive receptor locations would increase. Alternatively, construction of Phase 1 could be complete sooner than anticipated in the health risk assessment, exposing new onsite receptors to greater TAC emissions from Phase 2 construction. Under an extended construction schedule, onsite receptors would be exposed to construction for longer periods of time, which could result in increased health risks to onsite receptors compared to what has been modeled.

The phasing of project implementation would be subject to changes due to market conditions and other unanticipated factors, and construction could be complete as early as 2024 or extend beyond 2027. If construction is delayed or occurs over a longer period, extending beyond 2027, TAC emissions and associated health risks could be reduced because of (1) newer and cleaner-burning

[293] CalEPA, Office of Environmental Health Hazard Assessment, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment*, February 2015, *https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf*, accessed March 26, 2018.

construction equipment fleet mix and/or (2) a less intensive and overlapping buildout schedule (i.e., fewer daily emissions occurring over a longer period). Conversely, if construction is accelerated and occurs over a shorter period, health risks could increase for offsite receptors.

See Appendix E, Air Quality Technical Memorandum, for additional detail regarding the health risk assessment, including calculation of TAC emission rates for each source, AERMOD dispersion modeling parameters, sensitive receptor locations, and health risk calculations (including exposure assumptions, toxicity assumptions, and cancer risk calculations).

Odors

This analysis evaluates whether the proposed project would create objectionable odors that would affect a substantial number of people (e.g., by introducing new land uses that are typically associated with odor complaints).

Methods for Analysis of Cumulative Impacts

By definition, regional air pollution is largely a cumulative impact in that no single project is sufficient in size, by itself, to cause nonattainment of air quality standards. The contribution of a project's air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and reasonably foreseeable future projects in the vicinity also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in nonattainment of ambient air quality standards in the San Francisco Bay Area Air Basin. Instead, a project's individual emissions contribute to existing cumulative air quality conditions.[294] As described above, the project-level thresholds for criteria air pollutants are based on levels by 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 result in a considerable contribution to cumulative regional air quality impacts.

Similarly, the health risk assessment takes into account the cumulative contribution of localized health risks to sensitive receptors from sources included in the citywide modeling plus the proposed project's sources. There are no future foreseeable projects whose emissions have not been incorporated into the existing citywide health risk modeling. The City College facilities master plan projects are discussed qualitatively. However, unlike criteria air pollutants, health risks are localized impacts because beyond 1,000 feet from an emission source, pollutants disperse, and pollutant levels tend to return to background levels.[295] Thus, cumulative health risks are typically assessed based on cumulative emissions sources within 1,000 feet of a project site, which, for purposes of this SEIR, include I-280 and other BAAQMD-permitted stationary sources including gas stations and diesel generators. Thus, because the project-level analysis includes health risks from all known existing sources, the project-level analysis is also a cumulative health risk analysis.

[294] BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 2-1.
[295] CARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005 (hereinafter "ARB Air Quality and Land Use Handbook"), *http://www.arb.ca.gov/ch/handbook.pdf*.

Impact Evaluation

Impact AQ-1: During construction, the proposed project would not generate fugitive dust that could violate an air quality particulate standard, contribute substantially to an existing or projected particulate violation, or result in a cumulatively considerable net increase in particulate concentrations. (Less than Significant)

Construction of the proposed project has the potential to create temporary air quality impacts through emissions of fugitive dust. Fugitive dust emissions would result from site disturbance including excavation, grading, trenching, and asphalt recycling. Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust, which would contribute particulate matter to the local atmosphere. The Construction Dust Control Ordinance, described under "Local Regulations," p. 3.D-26, requires all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or expose or disturb more than 10 cubic yards, or 500 square feet, of soil to comply with specified dust control measures, whether or not the activity requires a permit from the director of public health.

Building permits will not be issued without written notification from the director of public health that states that the applicant has a site-specific dust control plan. A dust control plan is required for projects that would disturb 0.5 acre or more. Since the project site is 17.6 acres in size, a dust control plan is required. The Construction Dust Control Ordinance requires the project sponsor and the contractors who are responsible for construction activities to minimize visible dust on the site. Minimum dust control measures that apply to all projects include watering all construction areas sufficiently to prevent dust from becoming airborne; providing as much water as necessary to control dust (without creating runoff) in any area of land clearing, earth movement, excavation, and other dust-generating activity; during excavation and dirt- moving activities, wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday; covering any inactive stockpiles greater than 10 cubic yards or 500 square feet of excavated materials, and using dust enclosures, curtains, and dust collectors as necessary to control dust in the excavation area.

Other dust control measures in the required site-specific dust control plan could include but are not limited to: wetting down the area around soil improvements; an analysis of wind direction; placement of dust monitors; recordkeeping for particulate monitoring results; inspections and record keeping for visible dust; and establishing a hotline for surrounding community members to call and report visible dust problems. Reclaimed water must be used for watering down the construction area if required by San Francisco Public Works Code article 21, section 1100 et seq. City Ordinance 175-91 requires the use of non-potable water for soil compaction and dust control 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 (SFPUC). SFPUC operates a recycled water fill station at the Southeast Water Pollution Control Plant, which provides recycled water at no charge.

In addition to the requirements listed above, the site-specific dust control plan would require the project sponsor to submit a map to the director of public health that shows all sensitive receptors within 1,000 feet of the site. The project sponsor would be required to designate an individual to monitor project compliance with these dust control requirements. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that potential dust-related air quality impacts during project construction would be less than significant.

Mitigation: None required.

Comparison of Impact AQ-1 to PEIR Impact Analysis

The PEIR identified construction-related air quality impacts as less than significant with implementation of PEIR Mitigation Measure AQ-1, which would require implementing particulate control measures at all construction sites. This measure would be implemented through compliance with the requirements of the Construction Dust Control Ordinance, adopted in 2008. Therefore, PEIR Mitigation Measure AQ-1 is superseded by the Construction Dust Control Ordinance. Consequently, the proposed project would result in no new or substantially more severe significant impacts related to construction dust than was previously identified in the PEIR.

Impact AQ-2a: During construction, the proposed project would generate criteria air pollutants that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Significant and Unavoidable with Mitigation)

Construction of the proposed project has the potential to create temporary air quality impacts through emissions of criteria air pollutants associated with the use of heavy-duty construction equipment, construction workers' vehicle trips, and truck hauling trips. Fugitive ROG emissions would result from application of architectural coatings and paving. The assessment of construction air quality impacts considers each of these potential sources. Demolition and construction activities would require the use of heavy trucks, excavators, material loaders, cranes, and other mobile, and stationary construction equipment. During the project's approximately six-year construction period, construction activities would result in emissions of ozone precursors and PM, as discussed below.

Unmitigated construction emissions of ROG and NOx would be approximately 25 percent greater and PM emissions would be approximately 15 percent greater under the Additional Housing Option as compared to the Developer's Proposed Option on average over the entire construction period. Construction-related emissions were calculated for both project options, as presented below.

Table 3.D-7a, Unmitigated Average Daily Construction Emissions by Year, presents construction-period emissions for the proposed project for the Developer's Proposed Option and the Additional Housing Option. As shown in Table 3.D-7a, no construction-related emissions of any air pollutant for the Developer's Proposed Option would exceed the significance thresholds; this would be a less-than-significant impact. However, as also shown in Table 3.D-7a, construction-related emissions of NOx for the Additional Housing Option would exceed significance thresholds in 2022; this would be a significant impact.

TABLE 3.D-7A
UNMITIGATED AVERAGE DAILY CONSTRUCTION EMISSIONS BY YEAR

	Average Daily Emissions (pounds/day)[a,b,c,d]							
	Developer's Proposed Option				Additional Housing Option			
Year/Source	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
2021	3.4	32.5	1.2	1.2	3.4	32.5	1.2	1.2
2022	7.5	50.8	1.5	1.5	8.3	**67.2**	2.0	2.0
2023	12.8	25.4	0.4	0.4	16.5	31.1	0.3	0.3
2024	35.1	47.1	1.0	0.9	40.8	41.4	1.0	1.0
2025	5.0	25.9	0.5	0.5	7.4	30.7	0.5	0.5
2026	26.2	15.4	0.2	0.2	34.3	20.0	0.3	0.3
2027	33.6	13.7	0.3	0.3	42.1	18.9	0.3	0.3

SOURCE: ESA, 2019. See SEIR Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance
b For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260-262 construction working days in a year).
c Detailed construction emissions by phase can be found in SEIR Appendix E Tables 12 and 14.
d Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.
e Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions.

The two largest sources of construction NOx emissions would be off-road construction equipment and on-road vendor trips. At the start of construction in 2021, there are no vendor trips (this is the grading/ site prep phase) so NOx emissions are entirely a result of off-road equipment. Starting in 2022 with vertical construction, on-road vendor trips emissions are greater than off-road construction equipment emissions. For the Developer's Proposed Option, in 2022 when construction emissions peak, off-road construction equipment and vendor trips would represent approximately 67 percent and 31 percent of total unmitigated NOx emissions, respectively. For the Developer's Proposed Option, no pollutant would exceed the significance thresholds during any year of construction; NOx emissions would peak in 2022 at 50.8 lbs/day; this would also be a ***less-than-significant*** impact. However, for the Additional Housing Option, the NOx threshold would be exceeded when the majority of construction activities would occur in 2022 and would be 67.2 lbs/day; this would be a *significant* impact. Emissions of construction-related ROG, PM_{10}, and $PM_{2.5}$ would be below significance thresholds (i.e., *less-than-significant* impact) during all construction phases for both project options.

With regard to construction schedule and phasing, the analysis assumed that Phase 0 (site preparation and grading) would require a full year, followed by Phase 1 construction for 30 months, followed by Phase 2 construction for 30 months, for a full construction duration of six years. This is the longest feasible timeline as anticipated by the project sponsor. However, as discussed in the "Methods for Analysis of Impacts," p. 3.D-29, and in SEIR Chapter 2, Project Description, depending on market conditions and other unanticipated factors the project may be constructed over a shorter timeframe and Phases 1 and 2 may occur concurrently instead of sequentially; such phasing may result in full project construction over three years instead of six years. If this were to occur, the same amount of construction equipment and hours of operation would be required, but the activity would be compressed into a shorter duration. Therefore, average daily construction emissions would increase, increasing the NOx exceedances mentioned above.

It is estimated that this shortened construction schedule could result in average daily criteria pollutant emissions that are 1.5 to 2.5 times greater than those presented in **Table 3.D-7b, Unmitigated Average Daily Construction Emissions by Year for the Compressed Construction Schedule**. For example, average daily NOx emissions for the Developer's Proposed Option could be 120.4 pounds per day in 2022 (vs. 50.8 pounds per day) or 56.8 pounds per day in 2023 (vs. 47.1 pounds per day in 2024); average daily NOx emissions for the Additional Housing Option could be 139.8 pounds per day in 2022 (vs. 67.2 pounds per day) or 65.1 pounds per day in 2023 (vs. 41.4 pounds per day in 2024). In addition, average daily ROG emissions for the Additional Housing Option could be 94.6 pounds per day in 2023 (vs. 40.8 pounds per day in 2024), which would exceed the threshold for ROG. Therefore, such potential shortening of the project construction schedule would likely increase the NOx impact. The compressed schedule could also result in ROG impacts for the Additional Housing Option. Table 3.D-7b shows potential unmitigated criteria pollutant emissions under this compressed construction schedule, assuming Phase 0 construction occurs entirely in 2021, and Phase 1 and Phase 2 construction occur concurrently in 2022 and 2023.

TABLE 3.D-7B
UNMITIGATED AVERAGE DAILY CONSTRUCTION EMISSIONS BY YEAR FOR THE COMPRESSED CONSTRUCTION SCHEDULE

	Developer's Proposed Option[a]				Additional Housing Option[a]			
	ROG	NOx	PM_{10}[b]	$PM_{2.5}$[b]	ROG	NOx	PM_{10}[b]	$PM_{2.5}$[b]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
Average Daily Emissions (pounds/day)[c,d,e]								
2021	3.7	35.5	1.3	1.3	3.7	35.5	1.3	1.3
2022	20.6	**120.4**	2.9	2.8	25.9	**139.8**	3.5	3.4
2023	**76.1**	**56.8**	0.9	0.9	**94.6**	**65.1**	1.0	1.0

SOURCE: ESA, 2019.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance
b Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions.
c For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260–262 construction working days in a year).
d Detailed construction emissions by phase can be found in SEIR Appendix E Table 16.
e Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.

Health Implications of Significant Impacts Related to Emissions of Ozone Precursors

ROG and NOx are ozone precursors, and the main health concern of exposure to ground-level ozone is effects on the respiratory system, especially on lung function. Several factors influence these health impacts: the concentrations of ground-level ozone in the atmosphere; the duration of exposure; the average volume of air breathed per minute; the length of intervals between short-term exposures; and the sensitivity of the person to the exposure.[296,297] The concentration of ground-level ozone in the atmosphere is influenced by the volume of air available for dilution, the temperature, and the intensity of ultraviolet light. In the Bay Area, the worst case conditions for ozone formation occur in the summer and early fall on warm, windless, sunny days.[298]

Given these various factors, it is difficult to predict the magnitude of health effects from the proposed project's exceedance of significance criteria for regional ROG and NOx emissions. The increase in construction emissions associated with the proposed project for the anticipated six-year construction schedule represents a fraction of total San Francisco Bay Area Air Basin regional ROG emissions (up to 4.6 tons per year or 0.018 tons per day for the Developer's Proposed Option and up to 5.4 tons per year or 0.021 tons per day for the Additional Housing Option compared to an estimated 213 tons per day in the basin region in 2017)[299] and NOx emissions (up to 6.6 tons per year or 0.025 tons per day for the Developer's Proposed Option and up to 8.7 tons per year or 0.034 tons per day for the Additional Housing Option compared to an estimated 244 tons per day in the basin region in 2017). Although Table 3.D-1, p. 3.D-5, indicates that the most stringent applicable ozone standards were not exceeded at the San Francisco-Arkansas Street monitoring station between 2013 and 2017, the San Francisco Bay Area Air Basin as a whole experienced an average of 9 days of ozone exceedance per year between 2013 and 2017.[300] As shown in Table 3.D-3, p. 3.D-15, the basin has averaged between nine and 19 days per year that are considered unhealthy for sensitive groups and had 13 unhealthy (red) days in the last five years for which data are available. On unhealthy days, persons are recommended to avoid both prolonged and heavy-exertion outdoor activities.[301] In addition, there were three days designated as very unhealthy (purple) in 2017 during the October fires in the north bay.

For additional discussion of the proposed project's contribution to potential cumulative health effects associated with criteria pollutants, see Impact C-AQ-1, p. 3.D-88.

Mitigation of Construction-Related Air Quality Impacts

To address ROG and NOx emissions that would exceed significance thresholds during construction of the Additional Housing Option, **Mitigation Measures M-AQ-2a, Construction Emissions Minimization**; and **M-AQ-2b, Low-VOC Architectural Coatings**, shown below, have been identified and would apply during all construction phases.

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[296] The World Bank Group, *Pollution Prevention and Abatement Handbook 1998: Toward Cleaner Production*, 1999, pp. 227–230, *https://www.ifc.org/wps/wcm/connect/dd7c9800488553e0b0b4f26a6515bb18/%E2%80%8C%E2%80%8C%E2%80%8C%E2%80%8C%E2%80%8C%E2%80%8C.pdf?MOD=AJPERES*, accessed February 13, 2019.

[297] U.S. EPA, *Air Quality Guide for Ozone,* March 2015b, *https://airnow.gov/index.cfm?action=pubs.aqiguideozone*, accessed February 13, 2019.

[298] BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. C-15, accessed February 13, 2019.

[299] CARB, CEPAM 2016 – Standard Emission Tool, February 15, 2017, *https://www.arb.ca.gov/app/emsinv/fcemssumcat/fcemssumcat2016.php*, accessed February 13, 2019.

[300] BAAQMD, *Annual Bay Area Air Quality Summaries*, 2017, *http://www.baaqmd.gov/about-air-quality/air-quality-summaries*, accessed February 12, 23, 2018.

[301] U.S. EPA, *Air Quality Index, A Guide to Air Quality and Your Health,* February 2014, *www.epa.gov/airnow/aqi_brochure_02_14.pdf,* accessed February 13, 2019.

Mitigation Measure M-AQ-2a: Construction Emissions Minimization. In the case of the Developer's Proposed Option under the compressed three-year construction schedule or in the case of the Additional Housing Option under either the six-year construction schedule or the compressed three-year construction schedule, the project sponsor or the project sponsor's contractor shall comply with the following:

A. *Engine Requirements.*

1. All off-road equipment greater than 25 horsepower shall have engines that meet Tier 4 Final off-road emission standards.
2. Since grid power will be available, portable diesel engines shall be prohibited.
3. Renewable diesel shall be used to fuel all diesel engines unless it can be demonstrated to the Environmental Review Officer (ERO) that such fuel is not compatible with on-road or off-road engines and that emissions of ROG and NOx from the transport of fuel to the project site will offset its NOx reduction potential.
4. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the two-minute idling limit.
5. The contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment, and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.

B. *Waivers.* The ERO may waive the equipment requirements of subsection (A)(1) if: a particular piece of off-road equipment is technically not feasible; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or, there is a compelling emergency need to use other off-road equipment. If the ERO grants the waiver, the contractor must use the next cleanest piece of off-road equipment, according to the table below.

The ERO may waive the equipment requirements of Item A.1 if: a particular piece of off-road equipment with an engine meeting Tier 4 Final emission standards is not regionally available to the satisfaction of the ERO. If seeking a waiver from this requirement, the project sponsor must demonstrate to the satisfaction of the ERO that the health risks from existing sources, project construction and operation, and cumulative sources do not exceed a total of 10 μg/m^3 or 100 excess cancer risks for any onsite or offsite receptor.

The ERO may waive the equipment requirements of Item A.2 if: an application has been submitted to initiate onsite electrical power, portable diesel engines may be temporarily operated for a period of up to three weeks until onsite electrical power can be initiated or, there is a compelling emergency.

C. *Construction Emissions Minimization Plan.* Before starting onsite ground disturbing, demolition, or construction activities, the contractor shall submit a Construction Emissions Minimization Plan to the ERO for review and approval. The plan shall state, in reasonable detail, how the contractor will meet the requirements of Section A, Engine Requirements.

1. 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. The description 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 usage and hours of operation. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used.
2. The project sponsor shall ensure that all applicable requirements of the Construction Emissions Minimization Plan have been incorporated into the contract specifications. The plan shall include a certification statement that the contractor agrees to comply fully with the plan.
3. The contractor shall make the Construction Emissions Minimization Plan available to the public for review onsite during working hours. The contractor shall post at the construction site a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the project at any time during working hours and shall explain how to request to inspect the plan. The contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.

D. *Monitoring.* After start of construction activities, the contractor shall submit quarterly reports to the ERO documenting compliance with the Construction Emissions Minimization Plan. After completion of construction activities and prior to receiving a final certificate of occupancy, the project sponsor shall submit to the ERO a final report summarizing construction activities, including the start and end dates and duration of each construction phase, and the specific information required in the plan.

Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings. The project sponsor shall use low- and super-compliant VOC architectural coatings during construction. "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.

Residual Impact with Implementation of Mitigation Measure M-AQ-2a and Mitigation Measure M-AQ-2b

Mitigation Measure M-AQ-2a would reduce ROG emissions from off-road construction equipment by approximately 30 to 70 percent depending on the year. Emissions of NOx from off-road construction equipment would be reduced by approximately 10 to 40 percent depending on the year. The large reduction in construction emissions is a result of starting with fleetwide average emission factors for the construction fleet from OFFROAD for the unmitigated scenario to applying Tier 4 Final emission factors to off-road construction equipment for the mitigated scenario. The reason for the large range in ROG and NOx reductions depending on the year is that off-road construction activity varies substantially by year, and other construction emissions sources like haul trucks, vendor trucks, and worker trips also vary by year. For a detailed breakdown of construction emissions by source, please refer to SEIR Appendix E, Air Quality Technical Memorandum. Mitigation Measure M-AQ-2b would reduce ROG emissions from architectural coatings by approximately 90 percent during the building construction sub-phases.

Mitigated emissions are presented in **Table 3.D-8a, Mitigated Average Daily Construction Emissions by Year**. With implementation of Mitigation Measure M-AQ-2a and Mitigation Measure M-AQ-2b, construction emissions of NOx would not exceed the significance thresholds for the Developer's Proposed Option; maximum mitigated emissions would be 30.3 pounds per day in 2024. With implementation of Mitigation Measure M-AQ-2a and Mitigation Measure M-AQ-2b, construction emissions of NOx would not exceed the significance thresholds for the Additional Housing Option at 31.1 pounds per day maximum in 2022. In addition, with implementation of Mitigation Measure M-AQ-2a and Mitigation Measure M-AQ-2b, construction emissions of ROG would not exceed the significance thresholds for either the Developer's Proposed Option or the Additional Housing Option. Implementation of these mitigation measures would not result in any adverse environmental effects.

TABLE 3.D-8A
MITIGATED AVERAGE DAILY CONSTRUCTION EMISSIONS BY YEAR

Year/Source	Average Daily Emissions (pounds/day)[a,b,c,d]							
	Developer's Proposed Option				Additional Housing Option			
	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
2021	2.1	8.5	0.3	0.3	2.1	8.5	0.3	0.3
2022	3.4	23.1	0.2	0.2	4.3	31.1	0.3	0.2
2023	3.5	19.1	0.1	0.1	4.7	26.3	0.1	0.1
2024	6.2	30.3	0.2	0.2	7.0	23.1	0.2	0.2
2025	2.3	17.5	0.1	0.1	3.2	21.5	0.1	0.1
2026	4.2	11.7	0.1	0.1	5.8	15.8	0.1	0.1
2027	4.7	9.7	0.1	0.1	6.4	13.8	0.1	0.1

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance
b For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260–262 construction working days in a year).
c Detailed construction emissions by phase can be found in SEIR Appendix E Tables 12 and 14.
d Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.
e Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions.

As discussed above, because the construction schedule could be compressed into as little as three years, average daily combined construction and operational emissions could increase substantially, increasing the ROG and NOx emissions. It is estimated that this shortened construction schedule could result in average daily criteria pollutant emissions that are 1.5 to 2.5 times greater than those presented in Table 3.D-8a. For example, average daily mitigated NOx emissions for the Developer's

Proposed Option could be 69.6 pounds per day in 2022 (vs. 23.1 pounds per day); average daily mitigated NOx emissions for the Additional Housing Option could be 78.5 pounds per day in 2022 (vs. 31.1 pounds per day). Therefore, the potential condensed project construction schedule and phasing would likely increase the NOx impact. **Table 3.D-8b, Mitigated Average Daily and Total Annual Construction Emissions by Year for the Compressed Construction Schedule**, shows potential criteria pollutant emissions under this compressed construction schedule, assuming Phase 0 construction occurs entirely in 2021, Phase 1 construction occurs in 2022 and 2023, and Phase 2 construction occurs in 2022 and 2023, concurrent with Phase 1 construction.

TABLE 3.D-8B
MITIGATED AVERAGE DAILY AND TOTAL ANNUAL CONSTRUCTION EMISSIONS BY YEAR FOR THE COMPRESSED CONSTRUCTION SCHEDULE

	Developer's Proposed Option[a]				Additional Housing Option[a]			
	ROG	NOx	PM_{10}[b]	$PM_{2.5}$[b]	ROG	NOx	PM_{10}[b]	$PM_{2.5}$[b]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
Average Daily Emissions (pounds/day)[c,d,e]								
2021	2.4	9.3	0.3	0.3	2.4	9.3	0.3	0.3
2022	8.7	**69.6**	0.4	0.4	11.2	**78.5**	0.5	0.5
2023	12.8	41.6	0.2	0.2	16.4	49.7	0.3	0.3
Total Annual Emissions (tons/year)[c,d,e]								
2021	0.3	1.0	>0.1	0.0	0.3	1.0	>0.1	>0.1
2022	1.1	9.0	0.1	0.1	1.5	**10.2**	0.1	0.1
2023	1.7	5.4	>0.1	0.0	2.1	6.5	>0.1	>0.1
Total Annual Emissions Over Significance Threshold (offset requirement, tons/year)[f]								
2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	**2.0**	0.0	0.0	0.0	**3.2**	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	*0.0*	***2.0***	*0.0*	*0.0*	*0.0*	***3.2***	*0.0*	*0.0*

SOURCE: ESA, 2019.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance

b Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions.

c For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260–262 construction working days in a year).

d Detailed construction emissions by phase can be found in SEIR Appendix E Table 16.

e Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.

f Equation = average daily emissions – average daily significance threshold ÷ 2,000 pounds/ton * 260 work days per year. Note that these values are not based on the total annual emissions and annual emissions thresholds; they are based on average daily emissions and the average daily emissions thresholds.

The majority of mitigated NOx emissions during these years would be a result of vendor trucks delivering construction materials to the site. For the Developer's Proposed Option in 2022, vendor trucks would represent 68 percent of NOx emissions while off-road equipment would represent

27 percent. For the Additional Housing Option, in 2022 vendor trucks would represent 69 percent of NOx emissions while off-road equipment would represent 27 percent. For the compressed construction schedule, these ratios would be roughly equivalent. For the Developer's Proposed Option in 2022, vendor trucks are estimated to represent approximately 80 percent of NOx emissions while off-road equipment are estimated represent approximately 14 percent. There are no other feasible mitigation measures to reduce the NOx impact.

Because construction emissions could potentially exceed thresholds for both the Developer's Proposed Option and the Additional Housing Option under the compressed three-year construction schedule, as shown in Table 3.D-8b, all feasible mitigation measures are identified. For NOx emissions, the greatest threshold exceedances under the compressed construction schedule with inclusion of all feasible mitigation would occur during 2022 when construction activity would peak for Phase 1 construction and average daily emissions would be 15.6 pounds per day over the 54 pounds per day threshold for the Developer's Proposed Option and 24.5 pounds per day over the 54 pounds per day for the Additional Housing Option. This equates to 2.0 tons per year and 3.2 tons per year over the 10-ton-per-year threshold for the two project options.[302] These exceedances are addressed below in **Mitigation Measures M-AQ-2c, On-Road Truck Emissions Minimization for the Compressed Construction Schedule**, and **M-AQ-2d, Offset Construction Emissions for the Compressed Schedule**. The offset requirement is intended to offset the criteria air pollutant emissions from construction and remaining above significance levels after implementing the emission source reduction mitigation measures discussed. Note that both of these measures only apply to construction emissions under the compressed construction schedule.

> **Mitigation Measure M-AQ-2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule.** Under the compressed three-year construction schedule for either the Developer's Proposed Option or the Additional Housing Option, the project sponsor or the project sponsor's contractor shall comply with the following:
>
> A. *Engine Requirements.* The project sponsor shall ensure that all on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks, concrete trucks, and vendor trucks) be model year 2014 or newer.
>
> B. *Waivers.* The ERO may waive the engine year requirements of subsection (A) for on-road heavy duty diesel vendor trucks delivering materials to the project site, which could include window, door, cabinet, or elevator equipment if each vendor truck entering the project site is used only once for a single delivery of equipment or material per building. If the ERO grants the waiver, the contractor must demonstrate that that vendor truck would only be used once for a single delivery to the project site per building.

[302] The calculation is as follows: 15.6 pounds per day * 260 workdays ÷ 2,000 pounds per ton = 2.0 tons per year for the Developer's Proposed Option; 24.5 pounds per day * 260 workdays ÷ 2,000 pounds per ton = 3.2 tons per year for the Additional Housing Option. Note that the calculation for annual tons is based on the average daily emissions that exceed the average daily significance thresholds to account for the different averaging periods for construction emissions (260 days per year) and operational emissions (365 days per year. The annual significance thresholds for construction do not derive from the daily significance thresholds for construction (e.g., the average daily significance threshold 54 lbs/day over 260 days/year of construction = 7.1 tons per year, which is less than the annual significance threshold of 10 tons per year), which is another reason for this calculation.

Waivers to the engine year requirements of subsection (A) shall not be included for vendor trucks that import or off-haul soil, transport heavy earthmoving equipment, or ready-mix concrete, or deliver lumber.

C. *Construction Emissions Minimization Plan.* The construction minimization requirements of Mitigation Measure M-AQ-2a item (C).

D. *Monitoring.* The monitoring requirements of Mitigation Measure M-AQ-2a item (D).

Mitigation Measure M-AQ-2d: Offset Construction Emissions for the Compressed Schedule. Under the compressed three-year construction schedule for either the Developer's Proposed Option or the Additional Housing Option, the project sponsor shall implement this measure. Prior to issuance of the final certificate of occupancy for the final building associated with Phase 1, the project sponsor, with the oversight of the ERO, shall either:

1. *Directly fund or implement a specific offset project within San Francisco if available* to achieve the equivalent to a one-time reduction of 2.0 tons per year of ozone precursors for the Developer's Proposed Option or 3.2 tons per year of ozone precursors for the Additional Housing Option. To qualify under this mitigation measure, the specific emissions offset project must result in emission reductions within the San Francisco Bay Area Air Basin that would not otherwise be achieved through compliance with existing regulatory requirements. A preferred offset project would be one implemented locally within the City and County of San Francisco. Prior to implementing the offset project, it must be approved by the ERO. The project sponsor shall notify the ERO within six months of completion of the offset project for verification; or

2. *Pay mitigation offset fees* to the Bay Area Air Quality Management District Bay Area Clean Air Foundation. The mitigation offset fee, currently estimated at approximately $30,000 per weighted ton, plus an administrative fee of no more than 5 percent of the total offset, shall fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. The fee will be determined by the planning department, the project sponsor, and the air district, and be based on the type of projects available at the time of the payment. This fee is intended to fund emissions reduction projects to achieve reductions of 2.0 tons per year of ozone precursors for the Developer's Proposed Option or 3.2 tons per year of ozone precursors for the Additional Housing Option, which is the amount required to reduce emissions below significance levels after implementation of other identified mitigation measures as currently calculated.

   The agreement that specifies fees and timing of payment shall be signed by the project sponsor, the air district, and the ERO prior to issuance of the first site permit. This offset payment shall total the predicted 2.0 tons per year of ozone precursors for the Developer's Proposed Option or 3.2 tons per year of ozone precursors for the Additional Housing Option above the 10-ton-per-year threshold after implementation of Mitigation Measures M-AQ-2a, M-AQ-2b, and M-AQ-2c.

   The total emission offset amount is calculated by summing the maximum daily construction emissions of ROG and NOx (pounds/day), multiplying by 260 work days per year, and converting to tons. The amount represents the total estimated construction-related ROG and NOx emissions offsets required. No reductions are needed for operations or overlapping construction and operations.

Residual Impact with Implementation of Mitigation Measures M-AQ-2c and M-AQ-2d

Mitigation Measure M-AQ-2c requires that, under the compressed three-year construction schedule, all heavy-duty trucks greater than 19,500 pounds must have model year 2014 or newer engines; this includes vendor trucks that exceed this weight limit. This requirement would reduce both ROG and NOx emissions from vendor trucks and therefore overall construction emissions. However, to be conservative, Mitigation Measure M-AQ-2c was not quantified.

Mitigation Measure M-AQ-2d would offset emissions of ROG and NOx that would exceed the respective thresholds of significance for these pollutants. Thus, these offsets, if implemented, would reduce impacts to less-than-significant levels. The measure allows the project sponsor to directly fund or implement an offset project; however, no such project has yet been identified. Additionally, implementation of the emissions reduction project could be conducted by the air district and is outside the jurisdiction and control of the City and not fully within the control of the project sponsor. Therefore, the residual impact of project emissions during construction is conservatively considered ***significant and unavoidable with mitigation***, due to some limited uncertainty in its implementation. This finding does assume that the project sponsor would implement Mitigation Measures M-AQ-2a, M-AQ-2b, and M-AQ-2c, in addition to Mitigation Measure M-AQ-2d. Although the specific offset projects are not known, it is anticipated that implementation of this mitigation measure would not result in any adverse environmental effects.

Consequently, the results presented above show that construction of the project would have a significant and unavoidable impact with regard to NOx emissions. No additional feasible mitigation is available to reduce this impact.

Summary

The Developer's Proposed Option would be ***less than significant*** under the assumed six-year construction schedule. The Additional Housing Option under the assumed six-year schedule would be reduced to ***less than significant with mitigation*** through the implementation of Mitigation Measure M-AQ-2a and M-AQ-2b. Given the potential that the project could be developed under an accelerated construction schedule of three years' duration, the potential exists that construction emissions of NOx would exceed the daily and annual significance thresholds even with mitigation, which would be a ***significant impact*** (see Table 3.D-8b). Therefore, in the case of the Developer's Proposed Option or the Additional Housing Option under the compressed three-year construction schedule, the project sponsor would also be required to implement Mitigation Measure M-AQ-2c, which requires that all heavy-duty trucks greater than 19,500 pounds must have model year 2014 or newer engines, and Mitigation Measure M-AQ-2d, which requires the project sponsor to implement emission offsets. However, because implementation of the emissions offset project would be conducted by the air district and would be outside the jurisdiction and control of the City and not fully within the control of the project sponsor, because no specific emission reduction project has been identified, and because the project may be constructed over a much shorter timeframe resulting in higher NOx emissions than presented above, the impact with respect to criteria air pollutants is conservatively considered ***significant and unavoidable with mitigation***. These conclusions are summarized in **Table 3.D-9, Summary of Construction Criteria Pollutant Impacts (Impact AQ-2)**.

Mitigation Measure M-AQ-2a: Construction Emissions Minimization (Impact AQ-2a, p. 3.D-48).

Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings (Impact AQ-2a, p. 3.D-49).

Mitigation Measure M-AQ-2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule (Impact AQ-2a, p. 3.D-52).

Mitigation Measure M-AQ-2d: Offset Construction Emissions under the Compressed Schedule (Impact AQ-2a, p. 3.D-53).

Significance after Mitigation: Significant and Unavoidable.

TABLE 3.D-9
SUMMARY OF CONSTRUCTION CRITERIA POLLUTANT IMPACTS (IMPACT AQ-2)

Development Scenario	Assumed Duration	Mitigation Measures	Residual Significance
Developer's Proposed Option	6 years	None required	Less than Significant
Additional Housing Option	6 years	M-AQ-2a: Construction Emissions Minimization M AQ 2b: Low-VOC Architectural Coatings	Less than Significant
Developer's Proposed Option	3 years	M-AQ-2a: Construction Emissions Minimization M AQ 2b: Low-VOC Architectural Coatings M AQ 2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule M AQ 2d: Offset Construction Emissions for the Compressed Schedule	Significant and Unavoidable
Additional Housing Option	3 years	M-AQ-2a: Construction Emissions Minimization M AQ 2b: Low-VOC Architectural Coatings M AQ 2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule M AQ 2d: Offset Construction Emissions for the Compressed Schedule	Significant and Unavoidable

Comparison of Impact AQ-2a to PEIR Impact Analysis

The PEIR identified construction-related air quality impacts as less than significant with implementation of PEIR Mitigation Measure AQ-1, which would require maintaining and operating construction equipment so as to minimize exhaust emissions of particulates and other pollutants at all construction sites. This measure would be implemented through Mitigation Measure M-AQ-2a. Therefore, PEIR Mitigation Measure AQ-1 is superseded by Mitigation Measure M-AQ-2a. Consequently, the proposed project would result in a new significant impact that was not previously identified in the PEIR due to construction emissions of ROG and NOx exceeding significance thresholds for criteria air pollutants.

Impact AQ-2b: During construction phases that overlap with project operations, the proposed project would generate criteria air pollutants that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant with Mitigation)

Because operation of Phase 1 would occur during construction of Phase 2, the analysis below accounts for operational emissions associated with Phase 1 that would occur simultaneously with construction of Phase 2.

Table 3.D-10a, Unmitigated Average Daily Construction and Operational Emissions by Year, and **Table 3.D-10b, Unmitigated Total Annual Construction and Operational Emissions by Year**, present combined construction and operational emissions for the proposed project for the Developer's Proposed Option and the Additional Housing Option for years when construction and operations overlap (2024–2027). As shown in Table 3.D-10a, combined construction and operational emissions of NOx for the Developer's Proposed Option would exceed significance thresholds in 2024; this would be a significant impact. As also shown in Table 3.D-10a, combined construction and operational emissions of NOx for the Additional Housing Option would exceed significance thresholds in 2024, and combined construction and operational emissions of ROG would exceed significance thresholds in 2024, 2026, and 2027; this would also be a significant impact.

As discussed in Impact AQ-2a, p. 3.D-44, the primary source of construction NOx emissions would either be off-road construction equipment or on-road truck trips, and specifically vendor truck trips, depending on the year (for the Developer's Proposed Option in 2024, off-road construction equipment and vendor trips represent approximately 44 percent and 35 percent total unmitigated NOx emissions, respectively). The primary source of ROG emissions would be off-road construction equipment or fugitive emissions from architectural coatings and asphalt paving activities, depending on the year (for the Developer's Proposed Option in 2024, off-road construction equipment and architectural coatings represent approximately 6 percent and 86 percent of total unmitigated ROG emissions, respectively). ROG and NOx thresholds would be exceeded when the majority of construction activities for Phase 2 would occur and would overlap with Phase 1 operations; this would also be a *significant* impact. Emissions of construction-related PM_{10} and $PM_{2.5}$ would be below significance thresholds (i.e., *less-than-significant* impact) during all construction phases.

TABLE 3.D-10A
UNMITIGATED AVERAGE DAILY CONSTRUCTION AND OPERATIONAL EMISSIONS BY YEAR

Year/Source	Average Daily Emissions (pounds/day)[a,b,c,d]							
	Developer's Proposed Option				Additional Housing Option			
	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
2024:								
Construction	35.1	47.1	1.0	0.9	40.8	41.4	1.0	1.0
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*53.2*	**55.5**	*11.0*	*3.9*	**62.5**	*52.4*	*14.3*	*4.9*
2025:								
Construction	5.0	25.9	0.5	0.5	7.4	30.7	0.5	0.5
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*23.1*	*34.3*	*10.5*	*3.4*	*29.0*	*41.7*	*13.8*	*4.4*
2026:								
Construction	26.2	15.4	0.2	0.2	34.3	20.0	0.3	0.3
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*44.3*	*23.8*	*10.3*	*3.2*	**55.9**	*31.1*	*13.5*	*4.2*
2027:								
Construction	33.6	13.7	0.3	0.3	42.1	18.9	0.3	0.3
Operation[f,g]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*51.6*	*22.2*	*10.3*	*3.2*	**63.7**	*29.9*	*13.5*	*4.2*

SOURCE: ESA, 2019. See SEIR Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance

b For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260-262 construction working days in a year).

c Detailed construction emissions by phase can be found in SEIR Appendix E Tables 12 and 14; detailed operational emissions by source can be found in SEIR Appendix E Tables 17 and 18.

d Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.

e Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions. Operational emissions of PM_{10} and $PM_{2.5}$ include both exhaust and fugitive dust. Dust emissions for operations include road dust, brake wear, and tire wear from mobile sources.

f See Table 3.D-12a, p. 3.D-63, for breakdown of operational emissions.

g Average daily operational emissions in 2027 represent Phase 1 operations only, because only Phase 1 is operational while Phase 2 is under construction. Once Phase 2 is fully operational, Phase 1 construction emissions cease.

TABLE 3.D-10B
UNMITIGATED TOTAL ANNUAL CONSTRUCTION AND OPERATIONAL EMISSIONS BY YEAR

Year/Source	Total Annual Emissions (tons/year)[a,b,c,d]							
	Developer's Proposed Option				Additional Housing Option			
	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]
Significance Threshold	**10**	**10**	**15**	**10**	**10**	**10**	**15**	**10**
2024:								
Construction	4.6	6.2	0.1	0.1	5.4	5.4	0.1	0.1
Operation[f]	3.3	1.5	1.8	0.5	3.9	2.0	2.4	0.7
Total	*7.9*	*7.7*	*2.0*	*0.7*	*9.3*	*7.4*	*2.5*	*0.8*
2025:								
Construction	0.7	3.4	0.1	0.1	1.0	4.0	0.1	0.1
Operation[f]	3.3	1.5	1.8	0.5	3.9	2.0	2.4	0.7
Total	*4.0*	*4.9*	*1.9*	*0.6*	*4.9*	*6.0*	*2.5*	*0.8*
2026:								
Construction	3.4	2.0	0.0	0.0	4.5	2.6	0.0	0.0
Operation[f]	3.3	1.5	1.8	0.5	3.9	2.0	2.4	0.7
Total	*6.7*	*3.5*	*1.9*	*0.6*	*8.4*	*4.6*	*2.5*	*0.8*
2027:								
Construction	0.4	0.1	0.0	0.0	0.4	0.2	0.0	0.0
Operation[f]	5.4	2.3	3.1	0.9	6.8	3.3	4.4	1.3
Total	*5.8*	*2.5*	*3.1*	*0.9*	*7.3*	*3.5*	*4.4*	*1.3*

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance
b For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260-262 construction working days in a year).
c Detailed construction emissions by phase can be found in SEIR Appendix E Tables 12 and 14; detailed operational emissions by source can be found in SEIR Appendix E Tables 17 and 18.
d Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.
e Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions. Operational emissions of PM_{10} and $PM_{2.5}$ include both exhaust and fugitive dust. Dust emissions for operations include road dust, brake wear, and tire wear from mobile sources.
f See Table 3.D-11b, p. 3.D-64, for a breakdown of operational emissions.

Health Implications of Significant Impacts Related to Emissions of Ozone Precursors

As discussed in Impact AQ-2a, p. 3.D-44, ROG and NOx are ozone precursors, and the main health concern of exposure to ground-level ozone is effects on the respiratory system, especially on lung function. However, several factors influence these health impacts. Given these various factors, it is difficult to predict the magnitude of health effects from the proposed project's exceedance of significance criteria for regional ROG and NOx emissions.

The increase in combined construction and operational emissions associated with the proposed project represents a fraction of total San Francisco Bay Area Air Basin regional ROG emissions (up to 7.9 tons per year or 0.02 tons per day for the Developer's Proposed Option and up to 9.3 tons per year or 0.03 tons per day for the Additional Housing Option compared to an estimated 213 tons per day in the basin region in 2017)[303] and NOx emissions (up to 7.7 tons per year or 0.02 tons per day for the Developer's Proposed Option and up to 7.4 tons per year or 0.02 tons per day for the Additional Housing Option compared to an estimated 244 tons per day in the basin region in 2017). Although Table 3.D-1, p. 3.D-5, indicates that the most stringent applicable ozone standards were not exceeded at the San Francisco-Arkansas Street monitoring station between 2013 and 2017, the San Francisco Bay Area Air Basin experienced an average of 9 days of ozone exceedance per year between 2013 and 2017.[304] As shown in Table 3.D-3, p. 3.D-15, the basin has averaged between nine and 19 days per year that are considered unhealthy for sensitive groups and had 13 unhealthy (red) days in the last five years for which data are available. On unhealthy days, persons are recommended to avoid both prolonged and heavy-exertion outdoor activities.[305] In addition, there were three days designated as very unhealthy (purple) in 2017 during the October fires in the north bay.

For additional discussion of the proposed project's contribution to potential cumulative health effects associated with criteria pollutants, see Impact C-AQ-1, p. 3.D-88.

Mitigation of Combined Construction and Operational Air Quality Impacts

To address ROG and NOx emissions that would exceed significance thresholds during overlapping construction and operations of the proposed project, Mitigation Measures M-AQ-2a, Construction Emissions Minimization; and M-AQ-2b, Low-VOC Architectural Coatings have been identified and would apply during all construction phases, including construction phases that overlap with operational emissions.

Mitigated combined construction and operational emissions are presented in **Table 3.D-11a, Mitigated Average Daily Construction and Operational Emissions by Year**, and **Table 3.D-11b, Mitigated Total Annual Construction and Operational Emissions by Year**. Simultaneous emissions from construction and operations under mitigated conditions would not exceed any significance thresholds for either the Developer's Proposed Option or the Additional Housing Option.

Mitigation Measures M-AQ-2a and M-AQ-2b would reduce construction and operational emissions of ozone precursors below the thresholds of significance, as indicated in Table 3.D-11a and Table 3.D-11b. As discussed above, the construction schedule could be compressed into as little as three years; however, under this scenario, Phase 1 and Phase 2 would occur concurrently, instead of sequentially. Therefore, under the compressed construction schedule, there would be no overlap of construction and operational activities and no overlap in construction and operational emissions.

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303 CARB, CEPAM 2016 – Standard Emission Tool, February 15, 2017, *https://www.arb.ca.gov/app/emsinv/fcemssumcat/fcemssumcat2016.php*, accessed February 13, 2019.

304 BAAQMD, *Annual Bay Area Air Quality Summaries*, 2017, *http://www.baaqmd.gov/about-air-quality/air-quality-summaries*, accessed February 12, 23, 2018.

305 U.S. EPA, *Air Quality Index, A Guide to Air Quality and Your Health*, February 2014, *www.epa.gov/airnow/aqi_brochure_02_14.pdf*, accessed February 13, 2019.

TABLE 3.D-11A
MITIGATED AVERAGE DAILY CONSTRUCTION AND OPERATIONAL EMISSIONS BY YEAR

	Average Daily Emissions (pounds/day)[a,b,c,d]							
	Developer's Proposed Option				Additional Housing Option			
Year/Source	ROG	NOx	ROG	$PM_{2.5}$[e]	ROG	NOx	ROG	$PM_{2.5}$[e]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
2024:								
Construction	6.2	30.3	0.2	0.2	7.0	23.1	0.2	0.2
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*24.3*	*38.7*	*10.2*	*3.1*	*28.6*	*34.1*	*13.4*	*4.1*
2025:								
Construction	2.3	17.5	0.1	0.1	3.2	21.5	0.1	0.1
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*20.4*	*26.0*	*10.1*	*3.1*	*24.9*	*32.5*	*13.3*	*4.0*
2026:								
Construction	4.2	11.7	0.1	0.1	5.8	15.8	0.1	0.1
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*22.2*	*20.2*	*10.1*	*3.0*	*27.4*	*26.8*	*13.3*	*4.0*
2027:								
Construction	4.7	9.7	0.1	0.1	6.4	13.8	0.1	0.1
Operation[f]	18.1	8.4	10.0	3.0	21.6	11.0	13.2	3.9
Total	*22.8*	*18.1*	*10.1*	*3.0*	*28.0*	*24.8*	*13.3*	*4.0*

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance

b For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260–262 construction working days in a year).

c Detailed construction emissions by phase can be found in SEIR Appendix E Tables 12 and 14; detailed operational emissions by source can be found in SEIR Appendix E Tables 17 and 18.

d Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.

e Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions. Operational emissions of PM_{10} and $PM_{2.5}$ include both exhaust and fugitive dust. Dust emissions for operations include road dust, brake wear, and tire wear from mobile sources.

f See Table 3.D-12a, p. 3.D-63, for breakdown of operational emissions.

TABLE 3.D-11B
MITIGATED TOTAL ANNUAL CONSTRUCTION AND OPERATIONAL EMISSIONS BY YEAR

Year/Source	Total Annual Emissions (tons/year) [a,b,c,d]							
	Developer's Proposed Option				Additional Housing Option			
	ROG	NOx	PM_{10}	$PM_{2.5}$[e]	ROG	NOx	PM_{10}[e]	$PM_{2.5}$[e]
Significance Threshold	**10**	**10**	**15**	**10**	**10**	**10**	**15**	**10**
2024:								
Construction	0.8	4.0	0.0	0.0	0.9	3.0	0.0	0.0
Operation[f]	3.3	1.5	1.8	0.5	3.9	2.0	2.4	0.7
Total	*4.1*	*5.5*	*1.9*	*0.6*	*4.9*	*5.0*	*2.4*	*0.7*
2025:								
Construction	0.3	2.3	0.0	0.0	0.4	2.8	0.0	0.0
Operation[f]	3.3	1.5	1.8	0.5	3.9	2.0	2.4	0.7
Total	*3.6*	*3.8*	*1.8*	*0.6*	*4.4*	*4.8*	*2.4*	*0.7*
2026:								
Construction	0.5	1.5	0.0	0.0	0.8	2.1	0.0	0.0
Operation[f]	3.3	1.5	1.8	0.5	3.9	2.0	2.4	0.7
Total	*3.8*	*3.1*	*1.8*	*0.5*	*4.7*	*4.1*	*2.4*	*0.7*
2027:								
Construction	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0
Operation[f]	5.4	2.3	3.1	0.9	6.8	3.3	4.4	1.3
Total	*5.5*	*2.4*	*3.1*	*0.9*	*6.9*	*3.5*	*4.4*	*1.3*

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

a **Bold values** = threshold exceedance
b For each construction phase, annual emissions are divided over the number of construction days for the given phase, to determine the average daily emissions. Average daily construction emissions in pounds per day are calculated by taking the total construction emissions for a phase and dividing by the number of working days (260–262 construction working days in a year).
c Detailed construction emissions by phase can be found in SEIR Appendix E Tables 12 and 14; detailed operational emissions by source can be found in SEIR Appendix E Tables 17 and 18.
d Totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.
e Construction emissions of PM_{10} and $PM_{2.5}$ include exhaust emissions only, because the San Francisco Dust Control Ordinance mitigates all construction-related dust emissions. Operational emissions of PM_{10} and $PM_{2.5}$ include both exhaust and fugitive dust. Dust emissions for operations include road dust, brake wear, and tire wear from mobile sources.
f See Table 3.D-12a, p. 3.D-63, for breakdown of operational emissions.

Summary

As shown in Table 3.D-10a, combined construction and operational emissions of NOx for both the Developer's Proposed Option and the Additional Housing Option would exceed significance thresholds; this would be a significant impact. Implementation of Mitigation Measures M-AQ-2a and M-AQ-2b, pp. 3.D-48 and 3.D-49, would reduce construction-related and operational emissions associated with the proposed project, as quantified in Table 3.D-11a and Table 3.D-11b. These mitigation measures would reduce ROG and NOx below the significance thresholds. Although the project could be developed under an accelerated construction schedule of as little as three years' duration, under this scenario there would be no overlapping construction and operational emissions because Phase 1 and Phase 2 would occur at the same time and operational activities and associated emissions would not occur until full buildout once construction is complete. Therefore, potential changes in the construction schedule would not result in a significant and unavoidable impact. Consequently, the impact with respect to criteria air pollutants would be ***less than significant with mitigation***.

Mitigation Measure M-AQ-2a: Construction Emissions Minimization (Impact AQ-2a, p. 3.D-48).

Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings (Impact AQ-2a, p. 3.D-49).

Significance after Mitigation: Less than Significant with Mitigation.

Comparison of Impact AQ-2b to PEIR Impact Analysis

The PEIR identified construction-related air quality impacts as less than significant with implementation of PEIR Mitigation Measure AQ-1, which would require maintaining and operating construction equipment so as to minimize exhaust emissions of particulates and other pollutants at all construction sites. This measure would be implemented through Mitigation Measure M-AQ-2a. Therefore, PEIR Mitigation Measure AQ-1 is superseded by Mitigation Measure M-AQ-2a. Through implementation of all mitigation measures listed above, the proposed project would have a less-than-significant impact related to overlapping construction and operational emissions. Consequently, the proposed project would result in no new or substantially more severe significant impacts related to overlapping construction and operational emissions than was previously identified in the PEIR.

Impact AQ-3: During project operations, the proposed project would result in emissions of criteria air pollutants, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)

Operation of the proposed project has 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 vehicle trips, commercial employee commute trips, visitor, delivery truck, and waste management truck trips. Area sources include landscaping equipment, and the off-gassing associated with reapplication of architectural coatings, and consumer products (e.g., solvents, cleaning supplies, cosmetics, toiletries). Foreseeable stationary sources would consist of emergency diesel generators. Energy sources include natural gas combustion for stoves. Each of these sources was taken into account in calculating the proposed project's long-term operational emissions.

Estimated operational emissions under both project options are summarized in **Table 3.D-12a, Unmitigated Average Daily Operational Emissions by Source**, and **Table 3.D-12b, Unmitigated Total Annual Operational Emissions by Source**. Project design features incorporating sustainability elements, including building energy efficiency measures such as natural gas appliance efficiency, are included in the project analysis presented in Table 3.D-12a and Table 3.D-12b. As shown in Table 3.D-12a and Table 3.D-12b, project operational emissions would be below thresholds of significance for all criteria pollutants for both Phase 1 operation in 2024 and full buildout operation in 2027. This is a *less-than-significant* impact and no mitigation measures are required.

TABLE 3.D-12A
UNMITIGATED AVERAGE DAILY OPERATIONAL EMISSIONS BY SOURCE

	Average Daily Emissions (pounds/day)[b,c]							
	Developer's Proposed Option				Additional Housing Option			
Phase/Year/Source[a]	ROG	NOx	PM_{10}[d]	$PM_{2.5}$[d]	ROG	NOx	PM_{10}[d]	$PM_{2.5}$[d]
Significance Threshold	**54**	**54**	**82**	**54**	**54**	**54**	**82**	**54**
Phase 1 – 2024								
Area	15.7	0.4	0.2	0.2	18.5	0.5	0.2	0.2
Energy	0.2	1.4	0.1	0.1	0.2	1.8	0.1	0.1
Mobile	2.1	3.1	9.6	2.6	2.8	4.1	12.7	3.4
Emergency Generators	<0.1	0.3	<0.1	<0.1	<0.1	0.8	<0.1	<0.1
Delivery Vehicles	<0.1	3.4	0.2	<0.1	<0.1	3.9	0.2	<0.1
Total	*18.1*	*8.4*	*10.0*	*3.0*	*21.6*	*11.0*	*13.2*	*3.9*
Full Buildout – 2027								
Area	26.2	0.6	0.3	0.3	32.4	0.8	0.4	0.4
Energy	0.3	2.3	0.2	0.2	0.4	3.3	0.3	0.3
Mobile	3.1	4.6	16.4	4.4	4.3	6.6	22.9	6.2
Emergency Generators	<0.1	0.5	<0.1	<0.1	<0.1	1.5	<0.1	<0.1
Delivery Vehicles	<0.1	4.6	0.3	0.1	0.1	6.1	0.3	0.1
Total	*29.6*	*12.7*	*17.1*	*5.0*	*37.4*	*18.3*	*23.9*	*7.1*

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; CalEEMod = CALifornia Emissions Estimator MODel

[a] Categories defined as follows:

- **Area** = Emissions from landscaping equipment, consumer products, and architectural coatings. Refer to Appendix E, Air Quality Technical Memorandum, for the land use type and sizes assumed in the modeling. Emissions were modeled using CalEEMod.
- **Energy** = Emissions from natural gas combustion for space heating and cooking. Refer to Appendix E, Air Quality Technical Memorandum, for the land use type and sizes assumed in the modeling. Emissions were modeled using CalEEMod.
- **Mobile** = Operating emissions from daily residential, daycare, and restaurant auto trips. Refer to Appendix E, Air Quality Technical Memorandum, for the daily vehicle trips and trip lengths by land use type. Emission from auto trips were estimated using CalEEMod.
- **Emergency Generators** = Operating emissions from diesel-powered emergency generators.
- **Delivery Vehicles** = Operating emissions from daily office, retail, and restaurant delivery vehicles trips. Refer to Appendix E, Air Quality Technical Memorandum, for the daily vehicle trips and trip lengths by land use type. Emissions were estimated using emission factors from EMFAC2017.

[b] **Bold values** = threshold exceedance
[c] Note that totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.
[d] PM_{10} and $PM_{2.5}$ includes exhaust, road dust, brake wear, and tire wear.

TABLE 3.D-12B
UNMITIGATED TOTAL ANNUAL OPERATIONAL EMISSIONS BY SOURCE

Phase/Year/Source[a]	Total Annual Emissions (tons/year)[b,c]							
	Developer's Proposed Option				Additional Housing Option			
	ROG	NOx	PM_{10}[d]	$PM_{2.5}$[d]	ROG	NOx	PM_{10}[d]	$PM_{2.5}$[d]
Significance Threshold	**10**	**10**	**15**	**10**	**10**	**10**	**15**	**10**
Phase 1 – 2024								
Area	2.9	<0.1	<0.1	<0.1	3.4	<0.1	<0.1	<0.1
Energy	<0.1	0.2	<0.1	<0.1	<0.1	0.3	<0.1	<0.1
Mobile	0.4	0.6	1.8	0.5	0.5	0.8	2.3	0.6
Emergency Generators	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Delivery Vehicles	<0.1	0.6	<0.1	<0.1	<0.1	0.7	<0.1	<0.1
Total	*3.3*	*1.5*	*1.8*	*0.5*	*3.9*	*2.0*	*2.4*	*0.7*
Full Buildout – 2027								
Area	4.8	0.1	<0.1	<0.1	5.9	0.1	<0.1	<0.1
Energy	<0.1	0.4	<0.1	<0.1	<0.1	0.6	<0.1	<0.1
Mobile	0.6	0.8	3.0	0.8	0.8	1.2	4.2	1.1
Emergency Generators	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1
Delivery Vehicles	<0.1	0.8	<0.1	<0.1	<0.1	1.1	<0.1	<0.1
Total	*5.4*	*2.3*	*3.1*	*0.9*	*6.8*	*3.3*	*4.4*	*1.3*

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

ROG = reactive organic gas; NOx = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; CalEEMod = CALifornia Emissions Estimator MODel

[a] Categories defined as follows:

- **Area** = Emissions from landscaping equipment, consumer products, and architectural coatings. Refer to Appendix E, Air Quality Technical Memorandum, for the land use type and sizes assumed in the modeling. Emissions were modeled using CalEEMod.
- **Energy** = Emissions from natural gas combustion for space heating and cooking. Refer to Appendix E, Air Quality Technical Memorandum, for the land use type and sizes assumed in the modeling. Emissions were modeled using CalEEMod.
- **Mobile** = Operating emissions from daily residential, daycare, and restaurant auto trips. Refer to Appendix E, Air Quality Technical Memorandum, for the daily vehicle trips and trip lengths by land use type. Emission from auto trips were estimated using CalEEMod.
- **Emergency Generators** = Operating emissions from diesel-powered emergency generators.
- **Delivery Vehicles** = Operating emissions from daily office, retail, and restaurant delivery vehicles trips. Refer to Appendix E, Air Quality Technical Memorandum, for the daily vehicle trips and trip lengths by land use type. Emissions were estimated using emission factors from EMFAC2017.

[b] **Bold values** = threshold exceedance
[c] Note that totals may not match sums of intermediate values presented in this table or SEIR Appendix E tables due to rounding.
[d] PM_{10} and $PM_{2.5}$ includes exhaust, road dust, brake wear, and tire wear.

The majority of ROG emissions are generated from area sources, including architectural coatings, consumer products, and landscaping. Of the area-source emissions, the majority of the ROG emissions (approximately 76 percent) would be from consumer products, which are the various solvents that are used in nonindustrial applications and emit VOCs during their use. These typically include cleaning supplies, kitchen aerosols, cosmetics, and toiletries. Mobile-source emissions are estimated to generate the second-highest amount of ROG emissions (approximately 10 percent). The majority of NOx emissions would be generated by mobile sources (approximately

36 percent), natural gas combustion (approximately 18 percent), and use of emergency generators (approximately 4 percent for the Developer's Proposed Option and 8 percent for the Additional Housing Option). The majority of PM_{10} and $PM_{2.5}$ emissions would be generated by mobile sources (approximately 96 percent), the vast majority of which is dust emissions from tire wear, brake wear, and road dust (approximately 99 percent).

Because operational emissions do not exceed the significance thresholds for any criteria pollutant, mitigation measures are not required to reduce operational emissions.

Comparison of Impact AQ-3 to PEIR Impact Analysis

The PEIR identified a potentially significant impact from operational vehicle emissions of particulate matter. The PEIR concluded that the traffic increases associated with projected growth and development in the plan area would not significantly degrade regional or local air quality except for PM_{10}, which would exceed the air district's project-specific significance threshold in 2025 (the PEIR was based on the air district's 1999 threshold of 80 pounds per day of PM_{10}). However, the PEIR concluded that because the Area Plan would be consistent with BAAQMD-recommended strategies to reduce VMT, and PM_{10} is correlated with VMT, trip lengths (and therefore VMT) would be reduced. The PEIR Findings of Fact document identified no significant impacts associated with traffic-related PM_{10} emissions. Therefore, it is inferred that the PEIR concluded that PM_{10} emissions would be less than significant. In addition, the PEIR notes that PM_{10} emissions associated with the Area Plan would be less than PM_{10} emissions associated with development occurring in outlying areas, where trip lengths would be longer (resulting in greater VMT and therefore greater PM_{10} emissions), and that the Area Plan reduces trip lengths via other means. Therefore, the PEIR concluded a less-than-significant impact associated with operational criteria pollutant emissions.

The PEIR also identified operation-related emissions of ROG and NOx as less than significant because they were below the 1999 air district threshold of 80 pounds per day. The emissions calculated in the PEIR for 2010 (Tier 1 projects) totaled 60.3 pounds per day of ROG and 55.7 pounds per day of NOx, which both exceed the thresholds of significance of 54 pounds per day of ROG and NOx presented in this SEIR. Regardless, the proposed project would result in a *less-than-significant* impact with regard to operational emissions of criteria pollutants and no mitigation measures are required. Therefore, the proposed project would result in no new or substantially more severe significant impacts related to operational criteria pollutant emissions than was previously identified in the PEIR.

Impact AQ-4: Construction and operation of the proposed project would generate toxic air contaminants, including DPM, which could expose sensitive receptors to substantial pollutant concentrations. (Significant and Unavoidable with Mitigation)

Site preparation activities, such as demolition, excavation, grading, foundation construction, and other ground-disturbing construction activity, would affect localized air quality during the construction phases of the proposed project. Short-term emissions from construction equipment during these site preparation activities would include directly emitted PM ($PM_{2.5}$ and PM_{10}) and TACs such as DPM. Additionally, the long-term operational emissions from the project's mobile and stationary sources, as described in Impact AQ-3, p. 3.D-62, would include PM ($PM_{2.5}$) and

TACs such as DPM and some compounds or variations of ROGs. The generation of these short- and long-term emissions could expose sensitive receptors to substantial pollutant concentrations of TACs, resulting in a localized health risk. Therefore, a health risk assessment was conducted for the proposed project to determine the health risk of project construction and operations to both offsite and onsite receptors (see Appendix E, Air Quality Technical Memorandum, for detailed presentation of methodology and assumptions).

Neither the proposed onsite receptors (residences and daycare facilities) nor the nearest offsite receptors are located within an area that currently meets the APEZ criteria (100 in one million excess cancer risk or a $PM_{2.5}$ concentration of 10 μg/m^3). For receptors not located in areas that meet the APEZ criteria, a health risk assessment was conducted to determine whether the proposed project would, in combination with other existing sources in the area, result in a given offsite or onsite receptor meeting the APEZ criteria. If a receptor point meets the APEZ criteria, that otherwise would not without the project, a project would result in a significant health risk impact if the project would contribute to $PM_{2.5}$ concentrations at or above 0.3 μg/m^3 or result in an excess cancer risk at or greater than 10.0 per one million persons exposed.

However, there are sensitive receptors located within 1,000 meters of the project site that currently meet the APEZ criteria. These receptors are located within 500 feet of I-280. For receptors currently located in areas that meet the APEZ criteria, a health risk assessment was also conducted to determine whether the proposed project would contribute to $PM_{2.5}$ concentrations at or above 0.2 μg/m^3 or result in an excess cancer risk at or greater than 7.0 per one million persons exposed. If these thresholds are exceeded for these APEZ receptors, the proposed project would result in a significant health risk impact.

Excess Cancer Risk from Construction and Operation Emissions for Receptors Not in APEZ under Existing Conditions

Offsite Receptors

The cancer risk analysis in the health risk assessment for the project is based on DPM concentrations from construction on- and off-road equipment, as well as the operational DPM concentrations from the emergency generators and project-generated vehicle emissions. The assessment evaluated excess cancer risk and $PM_{2.5}$ concentrations as a result of exposure to both construction and operational emissions.

The maximum estimated excess lifetime cancer risk for each exposure scenario (see "Health Risk Assessment Methods," p. 3.D-38) for all sensitive receptor locations[306] for receptors not in the APEZ under existing conditions is presented in **Table 3.D-13a, Lifetime Cancer Risk Receptors Not Located in the APEZ but Would Be Located in the APEZ with the Proposed Project – Developer's Proposed Option**, and **Table 3.D-13b, Lifetime Cancer Risk for Receptors Not Located in the APEZ but Would Be Located in the APEZ with the Proposed Project – Additional Housing Option**.

[306] The HRA includes receptor locations out to a distance of 3,280 feet (1,000 meters) from the project site, consistent with citywide modeling. In addition to the residential receptors, ten schools and sixteen daycares within 1,000 meters of the project site were identified. See Appendix E, *Air Quality Supporting Information*, for a complete list of offsite sensitive receptors included in the analysis.

TABLE 3.D-13A
LIFETIME CANCER RISK RECEPTORS NOT LOCATED IN THE APEZ BUT WOULD BE LOCATED IN THE APEZ WITH THE PROPOSED PROJECT – DEVELOPER'S PROPOSED OPTION

	Lifetime Excess Cancer Risk (in One Million)[a,b]				
		Unmitigated		Mitigated[c]	
Scenario / Receptor Type	Bkgd.	Project	Total	Project	Total
Significance Threshold	**—**	**10.0[d]**	**100.0**	**10.0[d]**	**100.0**
Construction					
Resident (offsite)[e]	15.7	67.1	82.8	7.7	23.4
Resident (onsite)[f]	23.7	**108.9**	**132.6**	9.5	33.2
Daycare (offsite)[f]	21.9	**87.5**	**109.4**	11.6	33.5
Daycare (onsite)[f]	21.8	**238.4**	**260.2**	20.9	42.7
School (offsite)[e]	17.5	12.9	30.3	1.5	19.0
Construction + Operations					
Resident (offsite)[e]	15.7	67.5	83.3	8.1	23.9
Resident (onsite)[f]	23.7	**110.9**	**134.6**	11.4	35.1
Daycare (offsite)[f]	21.9	**87.7**	**109.6**	11.8	33.6
Daycare (onsite)[f]	21.8	**239.5**	**261.3**	22.0	43.8
School (offsite)[e]	17.5	13.1	30.6	1.7	19.2
Operations[e]					
Resident (offsite)[f]	61.7	5.5	67.2	5.4	67.2
Resident (onsite)[f]	18.2	14.8	33.0	14.7	32.9
Daycare (offsite)[f]	41.3	1.2	42.5	0.7	22.6
Daycare (onsite)f	19.4	7.0	26.4	6.9	26.3
School (offsite)[f]	35.1	0.6	35.7	0.5	35.6

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; µg/m³ = micrograms per cubic meter; Bkgd. = background value

a **Bold values** = threshold exceedance

b All receptors within 500 feet of I-280 also included in the APEZ, regardless of their cancer risk value, which may be below the APEZ criteria of 100 per million. This is consistent with CARB's *Air Quality and Land Use Handbook: A Community Health Perspective*, which suggests air pollutant levels decrease substantially at approximately 500 feet from a freeway.

c Mitigation measures include: (1) M-AQ-2a: all off-road construction equipment was modeled with Tier 4 Final engine emission standards; and (2) M-AQ-4a: all emergency generators were modeled with Tier 4 engine emission standards.

d The project-level threshold only applies when the background risk plus the project risk exceeds 100; otherwise, the threshold does not apply.

e Note that for these receptors, the unmitigated cancer risk from the proposed project combined with the background cancer risk would be less than 100; therefore, the onsite MEISR would not be placed in a new APEZ, and the significance threshold for the project contribution of 10.0 per 1 million would not apply.

f Note that for these receptors, the mitigated cancer risk from the proposed project combined with the background cancer risk would be less than 100; therefore, the onsite MEISR would not be placed in a new APEZ, and the significance threshold for the project contribution of 10.0 per 1 million would not apply.

TABLE 3.D-13B
LIFETIME CANCER RISK FOR RECEPTORS NOT LOCATED IN THE APEZ BUT WOULD BE LOCATED IN THE APEZ WITH THE PROPOSED PROJECT – ADDITIONAL HOUSING OPTION

Scenario / Receptor Type	Lifetime Excess Cancer Risk (in One Million)[a,b]				
	Bkgd.	Unmitigated		Mitigated[c]	
		Project	Total	Project	Total
Significance Threshold	**–**	**10.0[d]**	**100.0**	**10.0**	**100.0[d]**
Construction					
Resident (offsite)[e]	15.7	80.5	*96.3*	8.5	24.3
Resident (onsite)[f]	23.7	**122.6**	***146.3***	10.7	34.4
Daycare (offsite)[f]	21.9	**101.7**	***123.6***	12.6	34.5
Daycare (onsite)[f]	21.8	**267.7**	***289.5***	23.4	45.3
School (offsite)[e]	17.5	14.4	*31.9*	1.6	19.1
Construction + Operations					
Resident (offsite)[e]	15.7	81.2	97.0	9.2	25.0
Resident (onsite)[f]	23.7	**125.6**	**149.3**	13.4	37.1
Daycare (offsite)[f]	21.9	**102.0**	**123.8**	12.8	34.7
Daycare (onsite)[f]	21.8	**269.6**	**291.4**	25.3	47.1
School (offsite)[e]	17.5	14.8	32.3	1.9	19.4
Operations[e]					
Resident (offsite)[f]	61.7	7.8	69.5	7.6	69.4
Resident (onsite)[f]	18.2	25.1	43.2	24.9	43.1
Daycare (offsite)[f]	41.3	1.8	43.0	1.1	23.0
Daycare (onsite)[f]	19.4	11.8	31.2	11.7	31.1
School (offsite)[f]	35.1	1.0	36.1	0.7	25.4

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; µg/m^3 = micrograms per cubic meter; Bkgd. = background value

a **Bold values** = threshold exceedance

b All receptors within 500 feet of I-280 also included in the APEZ, regardless of their cancer risk value, which may be below the APEZ criteria of 100 per million. This is consistent with CARB's *Air Quality and Land Use Handbook: A Community Health Perspective*, which suggests air pollutant levels decrease substantially at approximately 500 feet from a freeway.

c Mitigation measures include: (1) M-AQ-2a: all off-road construction equipment was modeled with Tier 4 Final engine emission standards; and (2) M-AQ-4a: all emergency generators were modeled with Tier 4 engine emission standards.

d The project-level threshold only applies when the background risk plus the project risk exceeds 100; otherwise, the threshold does not apply.

e Note that for these receptors, the unmitigated cancer risk from the proposed project combined with the background cancer risk would be less than 100; therefore, the onsite MEISR would not be placed in a new APEZ, and the significance threshold for the project contribution of 10.0 per 1 million would not apply.

f Note that for these receptors, the mitigated cancer risk from the proposed project combined with the background cancer risk would be less than 100; therefore, the onsite MEISR would not be placed in a new APEZ, and the significance threshold for the project contribution of 10.0 per 1 million would not apply.

Offsite receptors considered in the health risk assessment include existing offsite receptors not currently located in the APEZ. There are no planned future offsite receptors expected within 1,000 meters of the project site. The majority of project-generated excess cancer risk at the Maximum Exposed Individual Sensitive Receptor (MEISR) would be attributable to construction emissions. The project's emissions would combine with existing background concentrations and would exceed the APEZ excess cancer risk criteria of an excess cancer risk of 100 per one million persons exposed, with the project contributing cancer risks of up to 87.7 per million and 102.0 per million at offsite daycare locations for the Developer's Proposed Option and the Additional Housing Option, respectively. The project's excess cancer risk contribution would exceed the significance threshold of 10. Therefore, without mitigation, the impact with regard to increased cancer risk would be significant for offsite receptors not located in the APEZ.

Table 3.D-13a and Table 3.D-12b also show the cancer risk under the mitigated condition, which includes emission reductions quantified for Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71. Mitigation Measure M-AQ-2a would reduce off-road DPM emissions by 88 to 89 percent and Mitigation Measure M-AQ-4a would reduce generator DPM emissions by 93 percent. Construction emissions contribute over 90 percent of the unmitigated project's health risk (see Appendix E, Air Quality Technical Memorandum, for additional detail).

For the offsite MEISR (daycare receptor), the mitigated lifetime excess cancer risk under proposed project conditions for the Developer's Proposed Option of 11.8 combined with the background cancer risk of 21.9 would equal 33.5, which is less than 100; the mitigated lifetime excess cancer risk under proposed project conditions for the Additional Housing Option of 12.8 combined with the background cancer risk of 21.9 would equal 34.7, which is also less than 100; therefore, under mitigated conditions, the offsite MEISR would not be placed in a new APEZ under either project option, and the significance threshold for the project contribution of 10.0 per 1 million would not apply. Consequently, implementation of Mitigation Measure M-AQ-2a alone would be sufficient to reduce this impact to a less-than-significant level, and the excess cancer risk impact on offsite receptors not located in the APEZ would be less than significant with mitigation.

As discussed under Impact AQ-2a, p. 3.D-44, the project may be constructed over a total of three years instead of six years. If this were to occur, the excess lifetime cancer risk at offsite sensitive receptor locations would increase, potentially worsening the impact. While the total exposure to TACs remains the same in this compressed construction scenario, more exposure would occur when sensitive receptors are younger and, thus, more susceptible to TAC exposure (i.e., the 3rd trimester and 0–2 age groups show a much higher cancer susceptibility than the 2–9 age groups; the compressed construction scenario would shift more TAC exposure from the 2–9 age group to the 0–2 age group, increasing cancer risk for these receptors). It is estimated that cancer risks could increase at least 40 percent for the offsite MEISR not in the APEZ under existing conditions as a result of the compressed the three-year construction schedule, leading to mitigated cancer risks of 17 to 18 per million for the Developer's Proposed Option and 19 to 20 per million for the Additional Housing Option. This would further contribute to the impact, but is not expected to increase the impact to a significant and unavoidable with mitigation level.

Onsite Receptors

The proposed project would include development of residential units and daycare facilities, which are considered sensitive land uses for purposes of the air quality evaluation. The proposed project would result in construction-related TAC emissions that would affect the occupants of Phase 1 of the proposed project and diesel backup generators may also impact these future residents and daycare receptors. This analysis conservatively assumes that the daycare would be fully operational and occupied as part of Phase 1, even though the daycare would be part of Block B in Phase 2 and will likely not be operational and occupied until the proposed project is fully built-out in 2027 with the completion of Phase 2. This was assumed to provide a worst-case analysis of health risks to the onsite daycare receptor in the event that the daycare would be occupied in Phase 1 and exposed to all of Phase 2 construction TAC emissions. The daycare receptors may not be exposed to any construction emissions at the project site.

The estimated excess cancer risk from the emissions at the onsite maximum exposed individual sensitive receptor are also presented in Table 3.D-13a, p. 3.D-67. The project's emissions would combine with existing background concentrations and would exceed the APEZ excess cancer risk criteria of 100 per one million persons exposed, with the project contributing cancer risks up to 110.9 per million for onsite residential receptors and 239.5 per million for onsite daycare receptors for the Developer's Proposed Option and 125.6 per million for onsite residential receptors and 269.6 per million for onsite daycare receptors for the Additional Housing Option. The project's contribution, for both project options, would exceed the significance threshold of 10. Therefore, the impact with regard to increased cancer risk would be significant for onsite receptors not located in the APEZ.

Table 3.D-13a, p. 3.D-67, and Table 3.D-12b, p. 3.D-68, also show the cancer risk under the mitigated condition, which includes emission reductions quantified for Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71. For the onsite MEISR (daycare receptor), the mitigated lifetime excess cancer risk under proposed project conditions for the Developer's Proposed Option of 22.0 combined with the background cancer risk of 21.8 would equal 43.8, which is less than 100; the mitigated lifetime excess cancer risk under proposed project conditions for the Additional Housing Option of 25.3 combined with the background cancer risk of 21.8 would equal 47.1, which is also less than 100; therefore, under mitigated conditions, the onsite daycare MEISR would not be placed in a new APEZ under either project option, and the significance threshold for the project contribution of 10.0 per 1 million would not apply. As shown in Table 3.D-13a and Table 3.D-12b, implementation of these mitigation measures would be sufficient to reduce this impact to a less-than-significant level, and the excess cancer risk impact on onsite receptors not located in the APEZ would be less than significant with mitigation.

It should be noted that if construction durations and phases are spread out over a longer period of time, this could result in increased health risks to onsite receptors compared to what has been modeled. Under an extended construction schedule, onsite receptors would be exposed to construction for longer periods of time, which could result in a significant impact. However, it should also be noted that by the time the project buildings are constructed, it is likely that MERV

13 filtration would be required by the Building Code.[307] This would result in less than significant health risk impacts to new onsite sensitive receptors.

In addition, in the unlikely event that the daycare would be completed in Phase 1 and be operational during Phase 2 construction, the potential for future health risk impacts from exposure of daycare receptors to Phase 2 construction TAC emissions would be potentially significant, especially given the potential that the project could be developed under an accelerated construction schedule of as little as three years' duration, increasing the DPM exposure of daycare receptors.

Implementation of **Mitigation Measures M-AQ-4a, Diesel Backup Generator Specifications**, and **M-AQ-4b, Install MERV 13 Filters at the Daycare Facility**, would reduce impacts related to TAC emissions at the daycare facility to a less-than-significant level. Mitigation Measure M-AQ-4b requires that the project sponsor install a mechanical ventilation system at the onsite daycare facility capable of achieving the protection from particulate matter equivalent to that associated with a MERV 13 filtration. MERV 13 air filters are considered high-efficiency filters able to remove 80 percent of fine particulate matter from indoor air.[308] According to MTC and ABAG, MERV 13 air filters may reduce $PM_{2.5}$ concentrations from stationary and mobile sources by approximately 53 percent and cancer risk by 42 percent.[309] However, the ability of the filters to reduce cancer risk and $PM_{2.5}$ exposure for onsite receptors depends on a variety of factors, including how often receptors are indoors versus outdoors, how often they have their widows open while indoors, and how frequently they are using the HVAC systems that utilize the filters. Based on this uncertainty, this measure was not quantified in terms of cancer risk and $PM_{2.5}$ concentration reduction. Nevertheless, this measure would reduce cancer risk and $PM_{2.5}$ exposure by at least 40 to 50 percent, and implementation of this measure would therefore reduce the potentially significant impact to less than significant levels.

Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications. To reduce ROG and NOx associated with operation of the proposed project, the project sponsor shall implement the following measures:

A. All new diesel backup generators shall:

1. Have engines that meet or exceed California Air Resources Board Tier 4 off-road emission standards which have the lowest NOx emissions of commercially available generators; and
2. Be fueled with renewable diesel, if commercially available,[310] which has been demonstrated to reduce NOx emissions by approximately 10 percent.

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[307] Section 120 of the adopted 2019 California Energy Code, which takes effect in 2020, will require MERV-13 filtration in multi-family residential buildings of four or more stories.

[308] CARB, *Air Cleaning Devices for the Home Frequently Asked Questions*, July 2014, *https://www.arb.ca.gov/research/indoor/acdsumm.pdf*, accessed February 20, 2019.

[309] Metropolitan Transportation Commission and the Association of Bay Area Governments, *Plan Bay Area 2040 Public Review Draft Environmental Impact Report*, Appendix G, Air Quality Analysis Methodology, 2017, *http://2040.planbayarea.org/cdn/farfuture/JYdaDtCFhYPSw0puV1UfrplCju6evvhMo2Zc8FCxsmU/1499353075/sites/default/files/2017-07/PBA%202040%20DEIR_Appendices_0_0.pdf*, accessed February 20, 2019.

[310] Neste MY renewable diesel is available in the Bay Area through Western States Oil.

B. All new diesel backup generators shall have an annual maintenance testing limit of 50 hours, subject to any further restrictions as may be imposed by the Bay Area Air Quality Management District in its permitting process.

C. For each new diesel backup generator permit submitted to Bay Area Air Quality Management District for the project, the project sponsor shall submit the anticipated location and engine specifications to the San Francisco Planning Department ERO 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 operator of the facility at which the generator is located shall be required to maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and to provide this information for review to the planning department within three months of requesting such information.

Residual Impact with Implementation of Mitigation Measure M-AQ-4a

Implementation of Mitigation Measure M-AQ-4a would reduce DPM and $PM_{2.5}$ emissions from generators by 93 percent, thereby reducing lifetime excess cancer risk and average annual $PM_{2.5}$ concentrations associated with emergency generator TAC emissions. Implementation of this mitigation measure would not result in significant adverse environmental effects.

Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility. If the daycare facility is constructed as part of Phase 1 and is operational while Phase 2 is under construction, the project sponsor shall install a mechanical ventilation system at the onsite daycare facility located in Block B capable of achieving the protection from particulate matter ($PM_{2.5}$) equivalent to that associated with a Minimum Efficiency Reporting Value (MERV) 13 filtration (as defined by American Society of Heating, Refrigerating and Air-Conditioning Engineers [ASHRAE] standard 52.2). The system must meet the requirements of San Francisco Health Code article 38 and San Francisco Building Code section 1203.5.

Residual Impact with Implementation of Mitigation Measure M-AQ-4b

In the event that the daycare is operational at the completion of Phase 1 and exposed to Phase 2 construction emissions, installing MERV 13 air filters (or equivalent) at the new onsite daycare location would reduce TAC exposure and resulting lifetime excess cancer risk for daycare receptors. This mitigation measure would reduce PM concentrations and cancer risk at the daycare sensitive receptor location by 40 to 50 percent (when accounting for time spent outdoors; the filters are over 80 percent effective in removing PM from the air). Consequently, construction-related health risks from the project would need to increase by roughly a factor of 3 or 4 to exceed the cancer risk threshold for the daycare receptors. Even with worst-case construction phasing assumptions for the onsite daycare receptor, cancer risks are not anticipated to increase even twofold from the current values. Therefore, the health risks to onsite daycare sensitive receptors would be less than significant.

Excess Cancer Risk from Construction and Operation Emissions for Receptors in APEZ under Existing Conditions

Offsite Receptors

The maximum estimated excess lifetime cancer risk for each exposure scenario (see "Health Risk Assessment Methods," p. 3.D-38) for all sensitive receptors in the APEZ under existing conditions is presented in **Table 3.D-14a, Lifetime Cancer Risk for Receptors Located in the APEZ – Developer's Proposed Option**, and **Table 3.D-14b, Lifetime Cancer Risk for Receptors Located in the APEZ – Additional Housing Option**.

TABLE 3.D-14A
LIFETIME CANCER RISK FOR RECEPTORS LOCATED IN THE APEZ – DEVELOPER'S PROPOSED OPTION

Scenario / Receptor Type[d]	Lifetime Excess Cancer Risk[a,b]				
	Bkgd.	Unmitigated		Mitigated[c]	
		Project	Total	Project	Total
Significance Threshold	**—**	**7.0**	**—**	**7.0**	**—**
Construction					
Resident (offsite)	74.0	4.2	78.2	0.5	74.5
School (offsite)	36.6	1.1	37.7	0.1	36.7
Construction + Operations					
Resident (offsite)	74.0	4.4	78.4	1.4	58.0
School (offsite)	36.6	1.3	37.8	0.3	36.8
Operations					
Resident (offsite)	56.6	2.4	59.0	2.4	59.0
School (offsite)	36.6	0.2	36.8	0.2	36.8

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; µg/m^3 = micrograms per cubic meter; Bkgd. = background value; n/a = Not applicable; i.e., for this receptor type, there are no receptors that are currently located in the APEZ.

a **Bold values** = threshold exceedance

b All receptors within 500 feet of I-280 also included in the APEZ, regardless of their cancer risk value, which may be below the APEZ criteria of 100 per million. This is consistent with CARB's *Air Quality and Land Use Handbook: A Community Health Perspective*, which suggests air pollutant levels decrease substantially at approximately 500 feet from a freeway.

c Mitigation measures include: (1) M-AQ-2a: all off-road construction equipment was modeled with Tier 4 Final engine emission standards; and (2) M-AQ-4a: all emergency generators were modeled with Tier 4 engine emission standards.

d Only receptor types that are already in the APEZ are shown in the table; there are no onsite residents, offsite daycare, and onsite daycare receptors in the modeling domain that are already located in the APEZ.

Offsite receptors considered in the health risk assessment include existing offsite receptors currently located in the APEZ due to their proximity to I-280 (within 500 feet). These tables do not show receptors types that are not already in the APEZ, including onsite residents, offsite daycare, and onsite daycare; risks to these receptors are discussed above. The majority of project-generated excess cancer risk at the MEISR would be attributable to construction emissions. For these receptor locations, the project would contribute cancer risks of up to 4.4 per million and 5.4 per million at offsite resident locations for the Developer's Proposed Option and the Additional Housing Option, respectively. The project's excess cancer risk contribution would not exceed the significance threshold of 7.0 in a million. Therefore, the impact with regard to increased cancer risk would be less than significant for offsite receptors located in the APEZ.

TABLE 3.D-14B
LIFETIME CANCER RISK FOR RECEPTORS LOCATED IN THE APEZ – ADDITIONAL HOUSING OPTION

Scenario / Receptor Type[d]	Lifetime Excess Cancer Risk[a,b]				
	Bkgd.	Unmitigated		Mitigated[c]	
		Project	Total	Project	Total
Significance Threshold	**—**	**7.0**	**—**	**7.0**	**7**
Construction					
Resident (offsite)	74.0	4.9	78.9	0.6	74.6
School (offsite)	36.6	1.3	37.8	0.1	36.7
Construction + Operations					
Resident (offsite)	74.0	5.4	79.4	1.8	58.5
School (offsite)	36.6	1.5	38.0	0.3	36.9
Operations					
Resident (offsite)	56.6	3.4	60.0	3.4	60.0
School (offsite)	36.6	0.3	36.9	0.3	36.9

SOURCE: ESA, 2019. See Appendix E, Air Quality Technical Memorandum.

NOTES:

$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; µg/m^3 = micrograms per cubic meter; Bkgd. = background value; n/a = Not applicable; i.e., for this receptor type, there are no receptors that are currently located in the APEZ.

a **Bold values** = threshold exceedance
b All receptors within 500 feet of I-280 also included in the APEZ, regardless of their cancer risk value, which may be below the APEZ criteria of 100 per million. This is consistent with CARB's *Air Quality and Land Use Handbook: A Community Health Perspective*, which suggests air pollutant levels decrease substantially at approximately 500 feet from a freeway.
c Mitigation measures include: (1) M-AQ-2a: all off-road construction equipment was modeled with Tier 4 Final engine emission standards; and (2) M-AQ-4a: all emergency generators were modeled with Tier 4 engine emission standards.
d Only receptor types that are already in the APEZ are shown in the table; there are no onsite residents, offsite daycare, and onsite daycare receptors in the modeling domain that are already located in the APEZ.

Although mitigation measures are not required to reduce the impact to offsite sensitive receptors located in the APEZ, Table 3.D-14a and Table 3.D-14b also show the cancer risk under the mitigated condition, which includes emission reductions quantified for Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71, which are required to reduce impacts to receptors not in the APEZ under existing conditions and to reduce construction-generated emissions of criteria pollutants.

Construction emissions contribute over 90 percent of the unmitigated project's health risk at the MEISR (see Appendix E, Air Quality Technical Memorandum, for additional detail). Implementation of Mitigation Measure M-AQ-2a would reduce cancer risk at the offsite receptor locations currently located in the APEZ further below the significance thresholds. As shown in Table 3.D-14a and Table 3.D-14b, under mitigated conditions, the project would contribute cancer risks at the unmitigated MEISR of up to 1.4 per million and 1.9 per million at offsite resident locations for the Developer's Proposed Option and the Additional Housing Option, respectively. It is worth noting that under mitigated conditions, the offsite MEISR is a different receptor location than under unmitigated conditions; in other words, the greatest cancer risk for mitigated emissions occurs at a different location than greatest cancer risk under unmitigated conditions. This is because the reduction in construction emissions from mitigation results in operational emissions being a relatively larger share of total emissions, and thus the mitigated MEISR occurs during the project operations phase. The project would contribute cancer risks at the mitigated MEISR of up to 2.4 per million and 3.4 per million at offsite resident locations for the Developer's Proposed Option and the Additional Housing Option, respectively.

As discussed above, the project may be constructed over a total of three years instead of six years. If this were to occur, the excess lifetime cancer risk at offsite sensitive receptor locations would increase. While the total exposure to TACs remains the same in this compressed construction scenario, more exposure would occur when sensitive receptors are younger and, thus, more susceptible to TAC exposure. It is estimated that cancer risks could increase at least 30 percent for the offsite MEISR currently located in the APEZ under the three-year construction schedule, leading to mitigated cancer risks of 7 to 8 per million for the Developer's Proposed Option and 10 to 11 per million for the Additional Housing Option. Although the cancer risk for both the Developer's Proposed Option and the Additional Housing Option under the anticipated construction schedule would be less than the threshold of 7.0 in a million, because the construction schedule is subject to change, this impact would be conservatively considered significant. Therefore, the excess cancer risk impact on offsite receptors would be significant and unavoidable with mitigation.

Onsite Receptors

There are currently no onsite receptors located in the APEZ under existing conditions. Therefore, no analysis was conducted.

$PM_{2.5}$ Concentrations from Construction and Operation Emissions for Receptors Not in APEZ under Existing Conditions

Offsite Receptors

The maximum estimated annual average $PM_{2.5}$ concentrations from all project sources at offsite receptor locations not in the APEZ under existing conditions are presented in Appendix E, Air Quality Technical Memorandum, Tables 31 and 33. The project's emissions would combine with existing background concentrations and would exceed the APEZ criteria of either an annual average $PM_{2.5}$ concentration of 10.0 $\mu g/m^3$, or a total lifetime excess cancer risk of 100.0 per million,[311] with the project contributing $PM_{2.5}$ concentrations of up to 0.38 $\mu g/m^3$ and 0.43 $\mu g/m^3$ at offsite daycare locations for the Developer's Proposed Option and the Additional Housing Option, respectively. The project's annual average $PM_{2.5}$ concentrations would exceed the significance threshold of 0.3 $\mu g/m^3$. Therefore, without mitigation, the impact with regard to $PM_{2.5}$ concentrations would be significant for offsite receptors not located in the APEZ.

Tables 31 and 33 in Appendix E, Air Quality Technical Memorandum, also show the annual average $PM_{2.5}$ concentrations under the mitigated condition, which includes emission reductions

[311] The APEZ is defined for receptor locations that meet the criteria for *either* lifetime excess cancer risk *or* annual average $PM_{2.5}$ concentrations. For example, if the lifetime excess cancer risk is 105 per million and the annual average $PM_{2.5}$ concentration is 9.5 $\mu g/m^3$, and the receptor would be in the APEZ even though the annual average $PM_{2.5}$ concentration does not exceed the APEZ criteria of 10.0 $\mu g/m^3$.

quantified for Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71. Mitigation Measure M-AQ-2a would reduce off-road $PM_{2.5}$ exhaust emissions by 80 to 85 percent, and Mitigation Measure M-AQ-4a would reduce generator $PM_{2.5}$ exhaust emissions by 93 percent. Construction emissions contribute over 90 percent of the unmitigated project's $PM_{2.5}$ concentrations (see Appendix E for additional detail).

For the offsite MEISR (daycare), the maximum mitigated annual average $PM_{2.5}$ concentrations under the Developer's Proposed Option of 0.04 μg/m^3 combined with background annual average $PM_{2.5}$ concentrations of 8.49 would equal 8.53, which is less than 10.0; and the maximum mitigated annual average $PM_{2.5}$ concentrations under proposed project conditions for the Additional Housing Option of 0.04 μg/m^3 combined with background annual average $PM_{2.5}$ concentrations of 8.49 would equal 8.53, which is less than 10.0. Therefore, under mitigated conditions, the offsite MEISR would not be placed in a new APEZ under either project option, and the significance threshold for the project contribution of an annual average $PM_{2.5}$ concentration of 0.3 μg/m^3 would not apply. Consequently, implementation of Mitigation Measure M-AQ-2a alone would be sufficient to reduce this impact to a less-than-significant level, and the annual average $PM_{2.5}$ concentration impact on offsite receptors not located in the APEZ would be less than significant with mitigation.

As noted above, the project may be constructed over a total of three years instead of six years. If this were to occur, the annual average $PM_{2.5}$ concentrations at offsite sensitive receptor locations would increase. While the total $PM_{2.5}$ emissions remain the same in this compressed construction scenario, annual average $PM_{2.5}$ concentrations would increase because the construction duration would be shorter. It is estimated that annual average $PM_{2.5}$ concentrations could increase at least 50 percent for the offsite MEISR currently located in the APEZ under the three-year construction schedule, leading to mitigated annual average $PM_{2.5}$ concentrations of approximately 0.05 μg/m^3 for the Developer's Proposed Option and approximately 0.06 μg/m^3 for the Additional Housing Option. Therefore, the annual average $PM_{2.5}$ concentration impact on offsite receptors not located in the APEZ would be less than significant with mitigation.

Onsite Receptors

The maximum estimated annual average $PM_{2.5}$ concentrations from all project sources at onsite receptor locations are presented in Tables 31 and 33 in Appendix E, Air Quality Technical Memorandum. The project's emissions would combine with existing background concentrations and would exceed the APEZ criteria of an annual average $PM_{2.5}$ concentration of 10 μg/m^3, or a total lifetime excess cancer risk of 100 per million,[312] with the project contributing $PM_{2.5}$ concentrations up to 1.33 μg/m^3 for onsite residential receptors and 1.33 μg/m^3 for onsite daycare receptors for the Developer's Proposed Option and 1.49 μg/m^3 for onsite residential receptors and 1.50 μg/m^3 for onsite daycare receptors for the Additional Housing Option. The project's annual average $PM_{2.5}$ concentrations would exceed the significance threshold of 0.3 μg/m^3. Therefore, without mitigation, the impact with regard to $PM_{2.5}$ concentrations would be significant for onsite receptors not located in the APEZ.

312 The APEZ is defined for receptor locations that meet the criteria for *either* lifetime excess cancer risk *or* annual average $PM_{2.5}$ concentrations. For example, if the lifetime excess cancer risk is 105 per million and the annual average $PM_{2.5}$ concentration is 9.5 μg/m^3, and the receptor would be in the APEZ even though the annual average $PM_{2.5}$ concentration does not exceed the APEZ criteria of 10.0 μg/m^3.

As noted above, this analysis conservatively assumes that the daycare would be fully operational and occupied as part of Phase 1 and exposed to all Phase 2 construction TAC emissions. However, the daycare would be part of Block B in Phase 2 and will likely not be operational and occupied until the proposed projects is fully built-out in 2027 with the completion of Phase 2. This was assumed to provide a worst-case analysis of health risks to the onsite daycare receptor in the event that the daycare would be occupied in Phase 1 and exposed to all of Phase 2 construction TAC emissions. Likely, the daycare receptors would not be exposed to any construction emissions at the project site.

Tables 31 and 33 in Appendix E, Air Quality Technical Memorandum, also shows the annual average $PM_{2.5}$ concentrations under the mitigated condition, which includes emission reductions quantified for Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71. For the onsite resident MEISRs, the maximum modeled mitigated annual average $PM_{2.5}$ concentrations under proposed project conditions for the Developer's Proposed Option of 0.12 μg/m^3 combined with background annual average $PM_{2.5}$ concentrations of 8.48 would equal 8.60, which is less than 10.0; and the maximum mitigated annual average $PM_{2.5}$ concentrations under proposed project conditions for the Additional Housing Option of 0.14 μg/m^3 combined with background annual average $PM_{2.5}$ concentrations of 8.48 would equal 8.62, which is less than 10.0. Therefore, under mitigated conditions, the onsite MEISR would not be placed in a new APEZ under either project option, and the significance threshold for the project contribution of an annual average $PM_{2.5}$ concentration of 0.3 μg/m^3 would not apply. Consequently, implementation of these mitigation measures would be sufficient to reduce this impact to a less-than-significant level, and the annual average $PM_{2.5}$ concentration impact on onsite receptors not located in the APEZ would be less than significant with mitigation.

It should be noted that if construction durations and phases are spread out over a longer period of time, this could result in increased $PM_{2.5}$ concentrations to onsite receptors compared to what has been modeled. Under an extended construction schedule, onsite receptors could be exposed to construction for longer periods of time, which could result in a significant and unavoidable impact. However, it should also be noted that by the time the project buildings are constructed, it is likely that MERV 13 filtration would be required by the Building Code.[313] This would presumably result in less than significant health risk impacts to new onsite sensitive receptors.

$PM_{2.5}$ Concentrations from Construction and Operation Emissions for Receptors in APEZ under Existing Conditions

Offsite Receptors

The maximum estimated annual average $PM_{2.5}$ concentrations from all project sources at offsite receptor locations in the APEZ under existing conditions are presented in Tables 35 and 37 in Appendix E, Air Quality Technical Memorandum. For these receptor locations, the project would contribute $PM_{2.5}$ concentrations of 0.02 μg/m^3 and 0.03 μg/m^3 at offsite resident locations for the Developer's Proposed Option and the Additional Housing Option, respectively. These values would not exceed the significance threshold of 0.2 μg/m^3. Therefore, the impact with regard to $PM_{2.5}$ concentrations would be less than significant for offsite receptors located in the APEZ.

[313] Currently being confirmed.

However, Tables 35 and 37 in Appendix E also show the annual average $PM_{2.5}$ concentrations under the mitigated condition, which includes emission reductions quantified for Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71. These mitigation measures are required to reduce the excess cancer risk impact. The annual average $PM_{2.5}$ concentrations from the proposed project would be reduced as a result of these mitigation measures, as shown in Table 3.D-14a, p. 3.D-73, and Table 3.D-14b, p. 3.D-74. Therefore, the $PM_{2.5}$ concentration impact on offsite receptors located in the APEZ would be less than significant.

As noted above, the project may be constructed over a total of three years instead of six years. If this were to occur, the annual average $PM_{2.5}$ concentrations at offsite sensitive receptor locations would increase, contributing further to the impact. While the total $PM_{2.5}$ emissions remain the same in this compressed construction scenario, annual average $PM_{2.5}$ concentrations would increase because the construction duration would be shorter. It is estimated that annual average $PM_{2.5}$ concentrations could increase at least 50 percent for the offsite MEISR currently located in the APEZ under the three-year construction schedule, leading to mitigated annual average $PM_{2.5}$ concentrations of approximately 0.05 $\mu g/m^3$ for the Developer's Proposed Option and approximately 0.06 $\mu g/m^3$ for the Additional Housing Option. Therefore, the annual average $PM_{2.5}$ concentration impact on offsite receptors located in the APEZ would be less than significant with mitigation.

Onsite Receptors

There are currently no onsite receptors located in the APEZ under existing conditions, so no analysis was conducted.

Summary

Impact AQ-4 addresses the potential for construction and operation of the proposed project to generate TACs at levels that would expose either offsite or onsite sensitive receptors to substantial pollutant concentrations. The health risk assessment conducted for this analysis determined that impacts associated with excess cancer risk at both offsite and onsite receptors would exceed significance thresholds without mitigation. These threshold exceedances occur at receptor locations that are not located in the APEZ under existing conditions, but would be located in the APEZ with contribution from the proposed project. Implementation of Mitigation Measures M-AQ-2a, p. 3.D-48, and M-AQ-4a, p. 3.D-71, would reduce this impact to a less-than-significant level, as quantified in Table 3.D-12a, p. 3.D-63; Table 3.D-11b, p. 3.D-64; Table 3.D-13a, p. 3.D-67; and Table 3.D-12b, p. 3.D-68. In addition, Mitigation Measures M-AQ-4b, p. 3.D-72, would reduce the impact on onsite daycare receptors, but would have no impact on either offsite or onsite residential receptors. Both the Developer's Proposed Option and the Additional Housing Option under the assumed six-year schedule would be ***less than significant with mitigation*** through the implementation of Mitigation Measure M-AQ-2a and M-AQ-4a. However, the health risks to existing offsite sensitive receptors may exceed the cancer risk thresholds under the worst-case three-year construction phasing scenario, as presented in Table 3.D-12a and Table 3.D-11b; therefore, this impact would be ***significant and unavoidable with mitigation***.

As discussed above, the project may be constructed over a shorter timeframe than assumed in this analysis. This could result in increased cancer risks to offsite receptors as well as increased $PM_{2.5}$

concentrations for both offsite and onsite receptors. Therefore, potential changes in the construction schedule could result in a significant and unavoidable impact.

For the reasons stated above, the impact associated with the project's potential to expose sensitive receptors to substantial pollutant concentrations would be ***significant and unavoidable with mitigation***. These conclusions are summarized in **Table 3.D-15, Summary of Air Quality Health Risks (Impact AQ-4)**.

> **Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (Impact AQ-2a, p. 3.D-48).
>
> **Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications** (Impact AQ-4, p. 3.D-71).
>
> **Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility** (Impact AQ-4, p. 3.D-72).
>
> **Significance after Mitigation:** Significant and Unavoidable

TABLE 3.D-15
SUMMARY OF AIR QUALITY HEALTH RISKS (IMPACT AQ-4)

Development Scenario	Assumed Duration	Mitigation Measures	Residual Significance
Developer's Proposed Option	6 years	M-AQ-2a: Construction Emissions Minimization M AQ 4a: Diesel Backup Generator Specifications M AQ 4b: Install MERV 13 Filters at the Daycare Facility [if operational during Phase 2 construction]	Less than Significant
Additional Housing Option	6 years	M-AQ-2a: Construction Emissions Minimization M AQ 4a: Diesel Backup Generator Specifications M AQ 4b: Install MERV 13 Filters at the Daycare Facility [if operational during Phase 2 construction]	Less than Significant
Developer's Proposed Option	3 years	M-AQ-2a: Construction Emissions Minimization M AQ 4a: Diesel Backup Generator Specifications	Significant and Unavoidable
Additional Housing Option	3 years	M-AQ-2a: Construction Emissions Minimization M AQ 4a: Diesel Backup Generator Specifications	Significant and Unavoidable

Comparison of Impact AQ-4 to PEIR Impact Analysis

The PEIR stated that the Phelan Loop Site Project may result in a potentially significant impact, although health risks would decline over time and the impact could be reduced to a less-than-significant level through the installation of upgraded ventilation systems in residential units as required by Mitigation Measure AQ-2. The PEIR also stated that Mitigation Measure AQ-2 would reduce exposure of future residents within the project area to TAC emissions, but did not determine whether the impact would be reduced to a less-than-significant level. However, the PEIR Findings of Fact document identified no significant impacts associated with health risks. Therefore, it is inferred that the PEIR concluded that health risk impacts would be less than significant with implementation of PEIR Mitigation Measure AQ-2. PEIR Mitigation Measure AQ-2 was identified to ensure than residential development proposed in the following areas shall include a project-specific analysis of

$PM_{2.5}$ and shall, if warranted, incorporate upgraded ventilation systems to minimize exposure of future residents to fine particulate matter (which includes DPM): (1) within 500 feet of the I-280 freeway; (2) adjacent to the proposed bus layover facility on the Phelan Loop Site; (3) any active recreation areas such as playgrounds that are proposed as part of any future residential development in either of these areas; and (4) any other location where total daily traffic volumes from all roadways within 500 feet of such location exceed 100,000 vehicles.

The health risk assessment conducted for the proposed project implements PEIR Mitigation Measure AQ-2, and no new future onsite receptors would be located within 500 feet of I-280. Although PEIR Mitigation Measure AQ-2 would reduce exposure of future residents to TACs, actual exposure would vary between residents depending on their length of exposure, and these actual risks were not known when the PEIR was prepared. Although the PEIR did not determine whether the impact would be reduced to a less-than-significant level with implementation of Mitigation Measure AQ-2, the PEIR Findings of Fact document identified no significant impacts associated with health risks; therefore, it is inferred that the PEIR concluded that this measure would be sufficient to reduce impacts to less-than-significant levels. As described in Impact AQ-4, p. 3.D-65, health risks to existing offsite sensitive receptors would be significant and unavoidable with mitigation. Consequently, the proposed project would result in a new significant impact than was previously identified in the PEIR related to exposing sensitive receptors to substantial pollutant concentrations associated with toxic air contaminants, including DPM, generated by proposed project operations.

Impact AQ-5: The proposed project could conflict with implementation of the Bay Area 2017 Clean Air Plan. (Less than Significant with Mitigation)

The consistency of the project with the adopted air quality plan is both a project-level effect and a cumulative effect. Therefore, there is not a separate cumulative impact with regard to consistency. The most recently adopted air quality plan for the San Francisco Bay Area Air Basin is the 2017 Clean Air Plan. The 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. It also provides a control strategy to reduce ozone, PM, air toxics, and GHGs. In determining consistency with the Clean Air Plan, this analysis considers whether the project would (1) support the primary goals of the Clean Air Plan, (2) include applicable control measures from the Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the Clean Air Plan.

The 2017 Clean Air Plan's primary goals are to protect public health and protect the climate, and it contains 85 measures some of which address the reduction of GHGs. These control strategies are grouped into the following categories:

- Stationary source measures;
- Transportation control measures;
- Energy control measures;
- Building control measures;
- Agricultural control measures;
- Natural and working lands control measures;
- Waste management control measures;
- Water control measures; and
- Super GHG control measures.

The Clean Air Plan recognizes that, to a great extent, community design[314] dictates individual travel modes and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and GHGs from motor vehicles is to channel future Bay Area growth into communities where goods and services are located nearby and people have a range of viable transportation options. To this end, the Clean Air Plan includes 85 control measures aimed at reducing air pollutants and GHGs in the San Francisco Bay Area Air Basin. Many of these measures address stationary sources and will be implemented by BAAQMD using its permit authority and therefore are not suited to implementation through local planning efforts or project approval actions. The potentially applicable Clean Air Plan measures are identified in **Table 3.D-16, Project Consistency with Applicable Control Measures of the 2017 Clean Air Plan**. This table identifies each control strategy and correlates it to specific elements of the proposed project or explains why the strategy does or does not apply to the proposed project.

As shown in Table 3.D-16, certain mitigation measures incorporated into the project support applicable control measures from the 2017 Clean Air Plan. With implementation of these mitigation measures, the proposed project would comply with applicable control strategies contained in the 2017 Clean Air Plan for the basin, and the impact would be ***less than significant with mitigation***. Specifically, implementation of the following mitigation measures would reduce this impact to a less-than-significant level: Mitigation Measures M-AQ-2a, M-AQ-2b, M-AQ-2c, and M-AQ-2d, pp. 3.D-48 to 3.D-53, along with M-AQ-4a, p. 3.D-71, and M-AQ-4b, p. 3.D-72.

TABLE 3.D-16
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES OF THE 2017 CLEAN AIR PLAN

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
SS25 – Coatings, Solvents, Lubricants, Sealants and Adhesives	SS25 will reduce emissions of ROG from architectural coatings and other materials by proposing more stringent ROG limits as appropriate.	Under Mitigation Measure M-AQ-2b, p. 3.D-49, would require low- and super-compliant VOC architectural coatings during construction, which exceed the BAAQMD regulatory limits for architectural coatings.	Yes with Mitigation Measure M-AQ-2b, p. 3.D-49,

[314] For people who live (and/or work) in low-density, car-oriented developments, the motor vehicle is often the only viable transportation option. In such situations, even the most robust strategy to promote alternative modes of travel can have, at best, only a very modest effect. In contrast, compact communities with a mixture of land uses make it much easier to walk, cycle, or take transit for at least some daily trips.

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
SS32 – Emergency Backup Generators	S32 will reduce emissions of DPM, TACs, and criteria pollutants from emergency backup generators by enforcing Rule 11-18, resulting in reduced health risks to impacted individuals. This measure will also have climate protection benefits through reduces GHG emissions.	Under Mitigation Measure M-AQ-4a, p. 3.D-71, all new diesel backup generators shall meet Tier 4 Final standards and be fueled with renewable diesel, if available. This would exceed the requirements of Rule 11-18.	Yes with Mitigation Measure M-AQ-4a, p. 3.D-71.
TR5 – Transit Efficiency and Use	TR5 will improve transit efficiency and make transit more convenient for riders through continued operation of 511 Transit, full implementation of Clipper® fare payment system and the Transit Hub Signage Program.	As part of the proposed TDM Plan for the proposed project, the project would provide real-time transportation information displays in building lobbies at each major entrance/exit showing transit lines, walk time to transit stops, availability of onsite car-share vehicles.	Yes
TR7 – Safe Routes to Schools and Safe Routes to Transit	TR7 will facilitate safe routes to schools and transit by providing funds and working with transportation agencies, local governments, schools, and communities to implement safe access for pedestrians and cyclists. Likely projects will include implementation of youth outreach and educational programs to encourage walking and cycling, the construction of bicycle facilities and improvements to pedestrian facilities.	The TDM Plan would prioritize pedestrian and bicycle access and implement measures to encourage alternative modes of transportation by building a dense, walkable, mixed-use, transit-oriented development, and prioritizing safety, especially for bicyclists and pedestrians.	Yes
TR9 – Bicycle and Pedestrian Access and Facilities	The bicycle component of TR9 strives to expand bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements include bike lanes, routes, paths, and bicycle parking facilities. The bicycle component also includes a bike share pilot project that was developed to assess the feasibility of bicycle sharing as a first- and last-mile transit option. The pedestrian component of this measure is intended to improve pedestrian facilities and encourage walking by funding projects that improve pedestrian access to transit, employment sites, and major activity centers. Improvements may include sidewalks/paths, benches, reduced street width and intersection turning radii, crosswalks with activated signals, curb extensions/bulbs, buffers between sidewalks and traffic lanes, and street trees.	The proposed project would provide a class II (bike lanes) or class IV (separated bikeway) facility on Lee Avenue and class III facilities (bike route, or shared lanes) would be provided on interior streets, North, South, and West streets and the Access Road at the north end of the site. Shared access for pedestrians and bicyclists would be provided at the shared public way Plymouth Avenue/SFPUC Open Space. Both project options would provide class 1 bicycle parking on the ground floor or in the first below-grade level of each buildings. Class 2 bicycle parking spaces would be located within public right-of-way adjacent to each building entrance or in the publicly accessible open space. The Developer's Proposed Option would provide at least 936 class 1 and 75 class 2 bicycle parking spaces. The Additional Housing Option would provide at least 1,100 class 1 and 80 class 2 bicycle parking spaces.	Yes

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
TR10 – Land Use Strategies	This measure supports land use patterns that reduce VMT and associated emissions and exposure to TACs, especially within infill locations and impacted communities.	The proposed project proposes building a dense, walkable, mixed-use, transit-oriented development, and prioritizing safety, especially for bicyclists and pedestrians consistent with the regional goals and targets expressed in the *Plan Bay Area 2040 Sustainable Communities Strategy*. As discussed in Impact AQ-4, land use changes proposed by the project would not result in significant TAC exposure for new onsite sensitive receptors with implementation of mitigation measures.	Yes with Mitigation Measures M-AQ-2a, p. 3.D-48; M-AQ-4a, p. 3.D-71; and M-AQ-4b, p. 3.D-72.
TR13 – Parking Policies	This control measure outlines how MTC and the Air District, in cooperation with regional agency partners, will (1) take actions at the regional level to implement parking policies that will benefit air quality, and (2) encourage and support local agency parking policies to reduce motor vehicle travel and promote focused growth.	The project's TDM Plan would unbundle parking costs from all leases and sales and ensure that the users of parking are the ones who ultimately pay for it. The TDM Plan would also establish maximum parking ratios that are lower than the transportation analysis zone average for residential uses.	Yes
TR14 – Cars and Light Trucks	This control measures summarizes actions by the Air District, MTC, local businesses, city and county governments, and state and federal agencies to expand the use of Zero Emission Vehicles and Plug-in Electric passenger vehicles and light-duty trucks within the Bay Area.	San Francisco Green Building Requirements require new large commercial projects, new high-rise residential projects and commercial interior projects to provide designated parking for low-emitting, fuel efficient, and carpool/van pool vehicles and mark 8 percent of parking stalls for such vehicles.	Yes.
TR15 – Public Outreach and Education	TR15 includes activities to encourage Bay Area residents to make choices that benefit air quality. This measure includes various public outreach campaigns to educate the public about the health effects of air pollution and the air quality benefits of reducing motor-vehicle trips and choosing transportation modes that reduce motor vehicle emissions. The measure includes outreach and education regarding electric vehicles, smart driving, carpooling, vanpooling, taking public transit, biking, walking, and telecommuting.	As part of a broader transportation marketing campaign, the proposed project would provide new residents and employees with a transportation welcome packet upon move-in or upon starting work at the site. These informational packets would be continuously updated as local transportation options change. The site's transportation staff would also engage in ongoing efforts to provide information on and market the use of non-auto modes.	Yes

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
TR22 – Construction, Freight and Farming Equipment	TR22 directs BAAQMD to work to reduce emissions from off-road equipment used in the construction, freight handling and farming industries by pursuing the following strategies: (1) offering financial incentives between 2017 and 2030 to retrofit engines with diesel particulate filters or upgrade to equipment with electric or Tier IV off-road engines; (2) work with CARB, the California Energy Commission and others to develop more fuel-efficient off-road engines and drive trains; and (3) work with local communities to encourage use of renewable electricity and fuels.	Under Mitigation Measure M-AQ-2a, p. 3.D-48, the project sponsor or its contractors would meet Tier 4 Final standards for all construction equipment greater than 25 hp. It also requires use of renewable diesel in construction equipment.	Yes with Mitigation Measure M-AQ-2a, p. 3.D-48.
EN1 – Decarbonize Electricity Production	EN1 focuses on lowering carbon emissions by switching the fuel sources used in electricity generation. The measure would promote and expedite a transition away from fossil fuels used in electricity generation (i.e., natural gas) to a greater reliance on renewable energy sources (e.g., wind, solar). In addition, this measure would promote an increase in cogeneration, which results in useful heat in addition to electricity generation from a single fuel source.	2019 title 24 requires high-rise multifamily buildings with ten habitable stories or fewer to be solar ready. Additionally, CleanPowerSF is San Francisco's Community Choice Aggregation program that enables users in the City to opt into energy programs from 100 percent renewable resources although this is a voluntary election of the homeowner. The proposed project would meet the requirements through use of solar and living roofs.	Yes
BL1 – Green Buildings	BL1 seeks to increase energy efficiency and the use of onsite renewable energy—as well as decarbonize existing end uses—for all types of existing and future buildings. The measure includes policy assistance, incentives, diffusion of public information, and targeted engagement and facilitation of partnerships in order to increase energy efficiency and onsite renewable energy in the buildings sector	The proposed project would establish a sustainability plan that outlines performance and monitoring criteria for its operation. The project would comply with the state's title 24 and San Francisco Green Building Code requirements for energy efficiency. The project sponsor would evaluate renewable energy approaches such as solar and living roofs as part of the sustainability plan to be included in the proposed project. The project would pursue Leadership in Energy and Environmental Design™ (LEED®) Gold® certification for the proposed buildings	Yes.
BL4 – Urban Heat Island	This control measure aims to reduce the "urban heat island" phenomenon by increasing the application of "cool roofing" and "cool paving" technologies, as well as increasing the prevalence of urban forests and vegetation, through voluntary approaches and educational outreach.	The proposed project would meet the requirements through use of solar and living roofs.	Yes

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Consistency of Proposed Project with Measure
NW2 – Urban Tree Planting	NW2 promotes the planting of trees in urbanized settings to take advantage of the myriad benefits provided by these trees, including: shading to reduce both the “urban heat island” phenomenon and the need for space cooling, and the absorption of ambient criteria air pollutants as well as carbon dioxide.	The proposed project would comply with Public Works Code section 806(d) by placing new street trees along street frontages, provide sidewalk landscaping.	Yes
WA3 – Green Waste Diversion; and WA4 – Recycling and Waste Reduction	WA3 seeks to reduce the total amount of green waste being disposed in landfills by supporting the diversion of green waste to other uses, while WA4 seeks to reduce greenhouse gas emissions by diverting recyclables and other materials from landfill.	The proposed project would comply with San Francisco’s Green Building Requirements by providing for recycling, compost, and solid waste collection and loading that is convenient for all users.	Yes
WR2 – Support Water Conservation	WR2 seeks to promote water conservation, including reduced water consumption and increased onsite water recycling, in residential, commercial and industrial buildings for the purpose of reducing greenhouse gas emissions.	The proposed project would be subject to specific requirements because it includes a new landscape area greater than or equal to 500 square feet. This requires that landscape projects be installed, constructed, operated, and maintained in accordance with rules adopted by the SFPUC that establish a water budget for outdoor water consumption. The proposed project would comply with all standards in the Residential Water Conservation Ordinance by meeting at least the minimum standards specified in the ordinance as applicable and/or required. For residential high-rise buildings this is a 30% reduction compared to that of the 2006 Plumbing Code. The project sponsor would install a non-potable water system to provide the project site with non-potable water needs, such as irrigation and/or toilet and urinal flushing.	Yes

SOURCE: BAAQMD, *Clean Air Plan: Spare the Air, Cool the Climate*, 2017.

NOTE: The TDM measures are subject to refinement

The proposed project’s impact with respect to GHGs is addressed in the initial study (see SEIR Appendix B), which found that the proposed project would be compliant with the San Francisco’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.

In addition to the measures listed in Table 3.D-16, transportation control measures that are identified in the Clean Air Plan are implemented by the San Francisco General Plan and the San Francisco

Planning Code (e.g., through the City's Transit First Policy, the bicycle parking requirements, and transit impact development fees). Additionally, the project would incorporate a TDM plan. As indicated in Table 3.D-16, implementation of the TDM plan would ensure the project includes relevant transportation control measures specified in the Clean Air Plan, further ensuring consistency with the plan and reducing this impact to a less-than-significant level.

Examples of a project that could cause the disruption or delay of Clean Air Plan control measures are projects that would preclude the extension of a transit line or bike path, or projects that propose excessive parking beyond parking requirements. The project proposes a development that would be a dense, walkable urban area near a concentration of regional and local transit service, including a Muni light rail stop at Geneva Avenue and San Jose Avenue, approximately 0.5 mile from the project site, and the Balboa Park BART less than 0.5 mile from the project site. The proposed project site is designated as a Priority Development Area pursuant to Plan Bay Area. This designation applies to new development areas that would support the day-to-day needs of residents and workers in a pedestrian-friendly environment served by transit. The proposed project would include bike lanes, bike-safety-oriented street design, and bike-parking facilities to promote bicycling on and around the project site.

The proposed project would provide up to 550 residential parking spaces and 750 public parking spaces for the Developer's Proposed Option and up to 650 residential parking spaces and no public parking spaces for the Additional Housing Option. Given the project's location in proximity to high-quality local transit services with connections to regional transit, the implementation of TDM measures, and the availability of on- and off-street public parking facilities, the Developer's Proposed Option and Additional Housing Option would not create a substantial parking deficit. Consequently, the proposed project does not propose excessive parking beyond city parking requirements.

As described above, without mitigation measures identified in this SEIR, the proposed project would not support all of the primary goals of the Clean Air Plan, but would not interfere with, disrupt or hinder implementation of the Clean Air Plan. However, with implementation of mitigation measures identified in this SEIR and compliance with applicable regulations as described in Table 3.D-16, p. 3.D-81, the project would include applicable control measures from the Clean Air Plan, thereby supporting the primary goals of the Clean Air Plan, and the project would not interfere with, disrupt, or hinder implementation of the Clean Air Plan. Therefore, this impact would be ***less than significant with mitigation***.

> **Mitigation Measure M-AQ-2a: Construction Emissions Minimization** (Impact AQ-2a, p. 3.D-48).
>
> **Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings** (Impact AQ-2a, p. 3.D-49).
>
> **Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications** (Impact AQ-4, p. 3.D-71).
>
> **Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility** (Impact AQ-4, p. 3.D-72).

Significance after Mitigation: Less than Significant

Comparison of Impact AQ-5 to PEIR Impact Analysis

The PEIR determined that implementation of the area plan would not result in a significant impact on regional air quality planning efforts. At the time of the PEIR, the Bay Area 2005 Ozone Strategy was the air district's most recently adopted regional air quality plan.[315] Based on the updated approach to analysis, the proposed project would support the primary goals of the 2017 Clean Air Plan and impacts would be less than significant with mitigation. Therefore, the proposed project would result in no new or substantially more severe significant impacts related to consistency with the Clean Air Plan than was previously identified in the PEIR.

Impact AQ-6: The proposed project would not create objectionable odors that would affect a substantial number of people. (Less than Significant)

Existing uses on the project site are entirely vacant buildings and facilities and are not an existing odor source. During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and depend on specific construction activities occurring at certain times and are not likely to be noticeable for extended periods of time beyond the boundaries of the project site. Therefore, the potential for diesel odor impacts is considered less than significant.

Although there may be some potential for small-scale, localized odor issues to emerge around project sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation, etc., substantial odor sources and consequent effects on onsite and offsite sensitive receptors would be unlikely. BAAQMD regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds and applies to restaurants that employ more than five persons. Therefore, because the project would be required to implement odor controls as required by applicable regulations, odor impacts would be ***less than significant***.

Mitigation: None required.

Comparison of Impact AQ-6 to PEIR Impact Analysis

The PEIR discussion was focused on odor sources such as diesel exhaust and increasing the number of residents near pollutant emission and odor sources such as the I-280 and major roadways. The PEIR concluded that odor impacts would be less than significant with PEIR Mitigation Measure AQ-2, which requires upgraded ventilation systems that would allow residents to close windows and ventilate/filter air mechanically and minimize exposure of future residents to odors. Through compliance with applicable regulations, the proposed project would have a less-than-significant impact related to odors. Therefore, the project would result in no new or substantially more severe significant impacts related to odors than was previously identified in the PEIR.

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315 San Francisco Planning Department, *Balboa Park Station Area Plan Final Environmental Impact Report*, December 4, 2008, p. 254.

Cumulative Impacts

This section discusses the cumulative impacts to air quality that could result from the proposed project in conjunction with cumulative projects.

Impact C-AQ-1: The proposed project, in combination with reasonably foreseeable future projects, would contribute to cumulative regional air quality impacts. (Significant and Unavoidable with Mitigation)

The contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and reasonably foreseeable future projects in the region also have or will contribute to adverse regional air quality impacts on a cumulative basis, resulting in a potentially significant cumulative air quality impact. 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 and associated health effects, and while its emissions may be individually limited, it could be cumulatively considerable when taken in combination with past, present, and future development projects.[316]

Project Contribution to Cumulative Health Effects

A CEQA air quality analysis of criteria air pollutants is based on significance thresholds that were set at emission levels tied to the region's attainment status.[317] As described above, the CEQA significance thresholds are emission levels above which stationary air pollutant sources permitted by the BAAQMD (typically, industrial facilities, refineries, and the like) must offset their emissions through purchase of emissions "offsets" from other facilities that have reduced emissions, either through installation of emissions controls or removal of an emissions source. Such offset levels allow for regional development while keeping the cumulative effects of new sources at a level that will not impede attainment of the NAAQS. Therefore, a CEQA air quality analysis of criteria air pollutants is essentially an analysis of regional, cumulative air quality impacts and a given project's contribution to those impacts.

As described in SEIR Section 3.D.4, Environmental Setting, p. 3.D-3, compliance with the ambient air quality standards indicates that regional air quality can be considered protective of public health. However, as also explained in Section 3.D.4, the ambient air quality standards are expressed in terms of the concentrations of individual pollutants within the air. And, with certain exceptions, it is not readily feasible, given current air quality modeling tools, to calculate an individual project's effect on ambient pollutant concentrations. Exceptions include CO, which is directly emitted from tailpipes and the concentration of which can be calculated proximate to locations such as high-volume intersections, where CO concentrations are typically highest. However, according to the

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316 BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 2-1.

317 SJVAPCD, Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and *League of Women Voters of Fresno v. County of Fresno*, 2015.

BAAQMD, CO emissions and concentrations have decreased dramatically in the nearly 45 years since introduction of the catalytic converter, and no exceedance of either state or national standards for CO has been recorded in the Bay Area since 1991.[318] Accordingly, modeling of CO concentrations is seldom required. Another exception is fine particulate matter. Concentrations of $PM_{2.5}$ are frequently used as a proxy for DPM in health risk assessments, which is a separate type of air quality analysis from that for criteria pollutants discussed herein.[319]

Ozone, however, is a regional pollutant for which project-specific concentration modeling is not reliable given current modeling limitations. Because of the complexity of ozone formation and the nonlinear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is infeasible to reliably convert specific mass emissions levels (i.e., weight) of NOx or ROGs emitted in a particular area (or by a particular project) to a particular concentration of ozone in that area.[320] Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone.[321,322] Furthermore, available models are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by NOx or ROG emissions from the local level, and in particular not at the level of an individual project.[323]

As a result, project-level mass (weight) emission thresholds have been established for ozone precursors (NOx and ROG) and other criteria pollutants precisely because it is not possible to readily convert mass emissions at the project-level to pollutant concentrations. As explained by the BAAQMD in its 2009 report justifying its CEQA significance thresholds, the thresholds for the ozone precursors ROG and NOx are tied to the BAAQMD's offset requirements for ozone precursors based on the fact that the Bay Area is not in attainment with the federal ozone standard and therefore such an approach is appropriate "to prevent further deterioration of ambient air quality and thus has nexus and proportionality to prevention of a regionally cumulative significant impact (e.g., worsened status of nonattainment)."[324] As explained above, attainment can be considered protective of public health, thus providing a strong link between a mass emission

318 BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, 2017, p. 6-1; *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en*, accessed February 11, 2019.

319 A separate HRA was prepared for this project to assess human exposure to DPM and PM2.5, the results of which can be found in Impact AQ-4.

320 SJVAPCD, Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2015.

321 SCAQMD, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2015.

322 SJVAPCD, Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2015.

323 SJVAPCD, Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party in Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, 2015.

324 BAAQMD, "Revised Draft Options and Justification Report: California Environmental Quality Act Thresholds of Significance," October 2009, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en*, reviewed February 11, 2019.

threshold and avoidance of health effects. For PM_{10} and $PM_{2.5}$, the BAAQMD established CEQA significance thresholds based on the federal New Source Review program for new stationary sources of pollution, which contains stricter thresholds than does BAAQMD's offset program for these pollutants. "These thresholds represent the emission levels above which a project's individual emissions would result in a considerable adverse contribution to the [San Francisco Bay Area Air Basin]'s existing air quality conditions."[325] As with ROG and NOx discussed above, these thresholds likewise provide a connection between a mass emission threshold and avoidance of health effects.

Summary

As described above and in the Approach to Analysis section, p. 3.D-27, the project-level thresholds for criteria air pollutants are based on levels by 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, because the proposed project's emissions exceed the project-level thresholds as explained in Impacts AQ-2a and AQ-2b, pp. 3.D-44 and 3.D-56, respectively, the project would result in a considerable contribution to cumulative regional air quality impacts, a significant impact. As discussed above, implementation of Mitigation Measures M-AQ-2a through M-AQ-2d, pp. 3.D-48 to 3.D-53, would reduce the severity of this impact; however, because of uncertainties in the implementation of these measures (particularly Mitigation Measure M-AQ-2d), these measures would not reduce the project's contribution to the cumulative impact to a less-than-significant level for the same reasons described in Impacts AQ-2a and AQ-2b. Therefore, the project's emissions of criteria air pollutants would be cumulatively considerable, and this cumulative impact would be ***significant and unavoidable with mitigation***.

Mitigation Measure M-AQ-2a: Construction Emissions Minimization (Impact AQ-2a, p. 3.D-48).

Mitigation Measure M-AQ-2b: Low-VOC Architectural Coatings (Impact AQ-2a, p. 3.D-49).

Mitigation Measure M-AQ-2c: On-Road Truck Emissions Minimization for the Compressed Construction Schedule (Impact AQ-2a, p. 3.D-52).

Mitigation Measure M-AQ-2d: Offset Construction Emissions (Impact AQ-2b, p. 3.D-53).

Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications (Impact AQ-4, p. 3.D-71)

Significance after Mitigation: Significant and Unavoidable.

Comparison of Impact C-AQ-1 to PEIR Impact Analysis

The PEIR did not identify separate cumulative impacts, but rather considered all air quality impacts as cumulative. However, the PEIR did identify a significant impact from operational vehicle

325 BAAQMD, "Revised Draft Options and Justification Report: California Environmental Quality Act Thresholds of Significance," October 2009, *http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en*, reviewed February 11, 2019.

emissions of PM_{10}. Nevertheless, the PEIR concluded that because the Area Plan would be consistent with BAAQMD-recommended strategies to reduce VMT, and PM_{10} is correlated with VMT, trip lengths (and therefore VMT) would be reduced. Because the PEIR Findings of Fact document identified no significant impacts associated with traffic-related PM_{10} emissions, it is inferred that the PEIR found that PM_{10} emissions would be less than significant. In addition, the PEIR notes that PM_{10} emissions associated with the Area Plan would be less than PM_{10} emissions associated with development occurring in outlying areas, where trip lengths would be longer (resulting in greater VMT and therefore greater PM_{10} emissions), and that the Area Plan reduces trip lengths via other means. Because the proposed project's emissions exceed the project-level thresholds as explained in Impacts AQ-2a and AQ-2b, pp. 3.D-44 and 3.D-56, respectively, the proposed project would result in a considerable contribution to cumulative regional air quality impacts, a significant impact. Therefore, the proposed project would result in a new significant impact related to cumulative criteria pollutant emissions that was not previously identified in the PEIR.

Impact C-AQ-2: The proposed project, in combination with reasonably foreseeable future projects, could contribute to cumulative health risk impacts on sensitive receptors. (Significant and Unavoidable with Mitigation)

As described in Impact AQ-4, p. 3.D-65, the health risk assessment conducted for this SEIR takes into account the contribution of existing localized health risks to sensitive receptors from sources included in the citywide modeling plus the proposed project's sources. There are, however, other reasonably foreseeable future projects, whose emissions have not been incorporated into the existing citywide health risk modeling. Additionally, the city has modeled health risks under 2040 conditions that account for anticipated growth in vehicle trips and also take into account the implementation of vehicle emission regulations.

BAAQMD has identified a distance of 1,000 feet as an appropriate zone of influence for assessing health risk impacts[326] and specifies that cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone. However, as discussed above, the HRA includes receptor locations out to a distance of 1,000 meters from the project site consistent with citywide health risk modeling. Consequently, the cumulative analysis presented below includes projects within 1,000 meters of the project site boundary.

Cumulative projects are identified in SEIR Section 3.A, Impact Overview, Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11. The cumulative projects within 1,000 meters of the project site considered within the zone of influence of identified maximally impacted offsite receptors in the project-level analysis are identified in **Table 3.D-17, Cumulative Projects within 1,000 Meters of Maximally Impacted Offsite Receptors**. Each of these projects were reviewed using a combination of Google Earth street view and environmental documentation available through the San Francisco Planning Department to determine whether construction activity is complete or, if

[326] BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 5-2.

not, what determinations were made in CEQA-related documentation with respect to construction air quality emissions and health risks.

TABLE 3.D-17
CUMULATIVE PROJECTS WITHIN 1,000 METERS OF MAXIMALLY IMPACTED OFFSITE RECEPTORS

Cumulative Project No. (from Table 3.A-1)	Project Name (Case File No.)	Status as of February 2019	How considered
1	2340 San Jose Avenue (Upper Yard) (2017-012151PRJ)	Building permit issued	Construction is estimated to be complete in 2021, before onsite receptors are present[a]
2	2301 San Jose Avenue (Geneva Office Building – Geneva Car Barn and Powerhouse) (2012.0262E)	Under construction	Construction to be complete in 2019[b] before onsite receptors are present
3	1601–1631 Ocean Avenue and 1271 Capitol Avenue (2009.1050ENV)	Under environmental review	No information is available regarding construction or operation.
4	350 Ocean Avenue (2017-001961ENV)	Under environmental review	The Preliminary Project Assessment determined that the project is below the BAAQMD construction and operational screening levels for criteria air pollutants and an analysis of the project's criteria air pollutant emissions is not likely to be required.
5	City College Facilities Master Plan		Construction could occur at the same time as the proposed project and could be operational before construction of the proposed project is complete.

SOURCE: San Francisco Planning Department, City College of San Francisco, 2019.

NOTES:

[a] Unknown Author, *Balboa Upper Yard – Concept Schedule*, April 30, 2018, *https://sfplanning.org/resource/permits-my-neighborhood*, accessed February 25, 2019.

[b] Friends of the Geneva Car Barn & Powerhouse, Project Page, *http://www.genevacarbarn.org/*, accessed February 25, 2019.

As indicated in Table 3.D-17, there are two projects which either involve no construction or for which construction is complete (or will be complete before new onsite receptors are present) and therefore construction-related emissions are not a cumulative consideration. Two of these cumulative projects have undergone environmental reviews that determined that their construction-related emissions and risks were not substantial. The final project that is reasonably foreseeable is the City College facilities master plan on the east basin that could overlap with the proposed project's construction timeframe. This provides a plan for facilities development at the Ocean Campus which includes some projects within 900 feet of the project site. These projects could include the City College Performing Arts Center located on the west site of Frida Kahlo Way, approximately 300 feet from the Balboa Reservoir project site and approximately 300 feet from the closest existing sensitive receptors to the north. The Performing Arts Center is anticipated to be under construction for 24 months from 2021 to 2023, and operational by 2023. The City College facilities master plan could add new sensitive receptors in the form of new student residents and a new childcare center; these receptors could potentially be exposed to the project's construction and operational TAC emissions if the new receptors are present in the near future. However, the project-level HRA identified residential sensitive receptors directly north and northeast of the project, school receptors at the Archbishop Riordan High School, and daycare receptors at the Little Lemon nursery school; these receptors are close to where the new City College facilities master plan receptors might be located. This cumulative analysis acknowledges the possibility that these projects could generate construction-related TAC emissions at the same time as the proposed project. No additional information or environmental review materials are available for the City College facilities master plan.

Citywide modeling of future health risks under 2040 conditions has been conducted by the City. This modeling includes transportation emissions for year 2040 and was based on growth projections that would have reasonably accounted for the traffic emissions from projects listed in SEIR Section 3.A, Impact Overview. Background (without project) cancer risk and $PM_{2.5}$ concentrations in 2040 are expected to decrease due to improved vehicle fleets and the electrification of Caltrain. Additionally, any backup diesel generators or other stationary sources that may be proposed by cumulative projects would need to meet BAAQMD permit requirements; therefore, emissions from these sources would be limited. Impact AQ-4 therefore presents a worst-case cumulative health risk analysis.

Citywide modeling for year 2040 does not include construction emissions because these are variable and difficult to predict. Cumulative year 2040 conditions without the project show lower background risks than the existing baseline cancer risks and consequently, addition of the proposed project's mitigated cancer risk to 2040 conditions would similarly not result in new locations meeting the APEZ criteria that otherwise would not without the project with mitigation. However, as discussed in Impact AQ-4, p. 3.D-65, the proposed project's impact with regard to increased cancer risk would be significant for offsite receptors currently located in the APEZ under existing conditions. Therefore, the project plus cumulative development projects and background risks in 2040 could potentially result in significant health risk impacts similar to those presented in Impact AQ-4.

The proposed project would be required to implement Mitigation Measure M-AQ-2a, p. 3.D-48, which could reduce construction-period emissions. Additionally, Mitigation Measure M-AQ-2d, p. 3.D-53, would limit diesel generator emissions. Implementation of these mitigation measures would reduce the project's contribution to cumulative air quality impacts, but not to a less-than-significant level. Therefore, cumulative health risk impacts would be ***significant and unavoidable with mitigation***.

Summary

In summary, the proposed project in combination with nearby cumulative projects and 2040 background conditions could result in a significant health risk impact on offsite and onsite sensitive receptors with respect to increased cancer risk. This impact would be reduced with incorporation of Mitigation Measures M-AQ-2a, p. 3.D-48; M-AQ-4a, p. 3.D-71; and M-AQ-4b, p. 3.D-72, but not to less-than-significant levels. Therefore, this impact would be ***significant and unavoidable with mitigation***.

> **Mitigation Measures M-AQ-2a: Construction Emissions Minimization** (Impact AQ-2a, p. 3.D-48).

Mitigation Measure M-AQ-4a: Diesel Backup Generator Specifications (Impact AQ-4, p. 3.D-71)

Mitigation Measure M-AQ-4b: Install MERV 13 Filters at the Daycare Facility (Impact AQ-4, p. 3.D-72).

Significance after Mitigation: Significant and Unavoidable

Comparison of Impact C-AQ-2 to PEIR Impact Analysis

The PEIR did not identify separate cumulative impacts, but rather considered all air quality impacts as cumulative. The PEIR stated that the Phelan Loop Site Project (now 1100 Ocean Avenue) may result in a potentially significant impact, though health risks would decline over time and the impact could be reduced to a less-than-significant level through the installation of upgraded ventilation systems in residential units as required by PEIR Mitigation Measure AQ-2. The PEIR also stated that PEIR Mitigation Measure AQ-2 would reduce exposure of future residents within the project area to TAC emissions, but did not determine whether the impact would be reduced to a less-than-significant level. However, because the PEIR Findings of Fact document identified no significant impacts associated with health risks, it is inferred that the PEIR concluded that health risk impacts would be less than significant with implementation of PEIR Mitigation Measure AQ-2. Because the proposed project's impact with regard to increased cancer risk as discussed in Impact AQ-4, p. 3.D-65, would be significant for offsite receptors, the proposed project would result in a considerable contribution to cumulative health risk impacts on sensitive receptors, a significant impact. Therefore, the proposed project would result in a new significant impact related to cumulative health risks that was not previously identified in the PEIR.

CHAPTER 4

Other CEQA Issues

4.A Growth-Inducing Impacts

The California Environmental Quality Act (CEQA) Guidelines require that an environmental impact report (EIR) evaluate the growth-inducing impacts of a proposed action (section 15126.2(d)). A growth-inducing impact is defined in the 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 were to establish substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) or if it were to 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 were to remove an obstacle to additional growth and development, such as removing a constraint on required public services, utilities, or infrastructure facility. Increases in population could tax 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.

The project site is located within the Balboa Park Priority Development Area, one of the 10 designated Priority Development Areas in San Francisco. Priority Development Areas are locally identified areas located near transit and having infill development opportunities; they are part of a regional planning initiative led by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The initiative links land use and transportation planning and promotes a connected and more compact land use pattern. Under the initiative, future growth in the region would be focused in the community-identified Priority Development Areas.

Priority Development Areas are also important components of Plan Bay Area, which is the regional planning effort undertaken in response to the Sustainable Communities Strategy (Senate Bill 375), a state law passed in 2008. Plan Bay Area focuses much of the region's projected growth within the Priority Development Areas. San Francisco elected officials and agency staff have participated in the Sustainable Communities Strategy development process since its inception, and the San Francisco Planning Department updates the City and County of San Francisco's (the City's) long-range land use allocation every four years based on the most recent ABAG forecast for the Sustainable Communities Strategy.

As discussed in subsequent EIR (SEIR) Appendix B, Initial Study, Section E.3, Population and Housing, Impact PH-1, p. B-18, the addition of 1,100 or 1,550 residential units would increase the residential population on the site by 2,530 to 3,565 persons. The proposed project would result in 1,380 and 2,415 more residents than originally analyzed in the PEIR for the Developer's Proposed Option and the Additional Housing Option, respectively. ABAG's population projection for the Balboa Park Priority Development Area is 9,855 in 2040, compared to a 2010 population of 3,819.[327] The project proposes a maximum of 1,550 residential units, which would represent approximately 23 percent of the housing unit growth within the Balboa Park Priority Development Area during that period. ABAG also projected a citywide population growth of 280,465 persons between 2010 and 2040 (from 805,235 in 2010 to 1,085,700 in 2040).[328] As described under Impact PH-2, the population increase attributable to the proposed project would represent up to 0.6 percent of the projected increase in citywide growth and less than 0.1 percent of the projected increase in the Bay Area–wide population growth. The growth projections in the Balboa Park Priority Development Area represent planned growth in the city, as Priority Development Areas are locally designated areas within existing communities that have been identified and approved by local cities or counties for future growth.

As also described in Impact PH-2, the proposed retail space and childcare facility/community space would generate an estimated 30 jobs. The jobs created by the proposed project would represent an increase of approximately 12 percent of the maximum number of jobs envisioned in the plan area. However, the increase in jobs from the proposed project would represent less than 1 percent of citywide job growth and would not represent a substantial increase in growth as compared to the anticipated employment growth of 190,780 jobs expected for the city from 2010–2040.[329] Thus, while development of the project would represent growth, the generation of new jobs would not encourage substantial new growth that is not currently projected for San Francisco. Further, as addressed under their respective topics in the initial study, this project-related growth would be served by existing utilities, infrastructure, and public services.

The increase in the residential and employment population on the project site would not result in a substantial or unplanned increase in the population of the project vicinity or the city because it

327 Metropolitan Transportation Commission (MTC), Plan Bay Area (2013) Forecast by Priority Development Area: Balboa Park, *http://opendata.mtc.ca.gov/datasets*, November 2018. While the *Plan Bay Area 2040 is* the most current regional planning document, it does not provide explicit updated population forecasts at the Priority Development Area level; therefore, this analysis considers data as included in the *2013 Plan Bay Area* to estimate planned growth in the Balboa Park Priority Development Area.

328 ABAG, *Projections 2013*, December 2013. The *Plan Bay Area 2040* indicates that its projections for the region as a whole represent a moderate increase over 2040 estimates from the 2013 Plan Bay Area and incorporate the region's strong growth since 2010; thus, analyzing growth based on the 2013 Plan Bay Area provides a more conservative growth analysis.

329 ABAG, *Projections 2013*, December 2013.

would be located on an infill site in an urbanized area. Growth associated with the project site would be consistent with the City's identification of Balboa Park as an area of San Francisco where future growth will be focused. Although the proposed project would construct new internal roadways and site infrastructure, the proposed project would not result in the extension of infrastructure systems beyond what is needed to serve project-specific demand. The proposed project would not result in the construction of a residential project in an undeveloped area; or remove obstacles to population growth such as the provision of major new public services to an area where those services are not currently available.

Based on this analysis, the project would not have a substantial growth-inducing impact, and no mitigation is required.

4.B Significant and Unavoidable Impacts

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. As described in SEIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, the impacts listed below would be considered significant and unavoidable, even with implementation of feasible mitigation measures. With the exception of the impacts listed below, all other project impacts would be either less than significant or reduced to less-than-significant levels by implementation of the identified mitigation measures.

4.B.1 Transportation and Circulation

Operation of the proposed project, including proposed street network changes, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. No feasible mitigation measures were identified, and this impact is considered significant and unavoidable. (Impact TR-6b)

The proposed project, in combination with reasonably foreseeable future projects, would increase vehicle traffic and transit ridership. Given the uncertainty regarding growth associated with implementation of City College facilities master plan projects, this impact is conservatively considered a significant cumulative impact and the project's contribution to this impact would be cumulatively considerable. Mitigation would require the project sponsor to monitor transit travel times and implement measures to meet the transit travel time performance standard; however, given the uncertainty regarding the effectiveness of TDM measures and if SFMTA would approve other measures under their jurisdiction, even with implementation of the mitigation measure, this impact is conservatively considered to remain significant and unavoidable with mitigation. (Impact C-TR-4)

Operation of the proposed project, including proposed street network changes, in combination with reasonably foreseeable future projects, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. The project's contribution to this impact would be cumulatively considerable. No feasible mitigation measures were identified, and this impact is considered significant and unavoidable. (Impact C-TR-6b)

4.B.2 Noise and Vibration

Project construction would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors above levels existing without the project. Mitigation including construction noise control measures would lessen the severity of the impact, but not to a less-than-significant level. This impact is significant and unavoidable with mitigation. (Impact NO-1)

Construction of the proposed project, in combination with construction of other cumulative development, would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors, due to overlapping construction activities in proximity to existing offsite receptors, resulting in a significant cumulative impact. The project's contribution to this impact would be cumulatively considerable without mitigation. Mitigation including construction noise control measures would lessen the severity of the impact, but not to a less-than-significant level. (Impact C-NO-1)

4.B.3 Air Quality

During project construction (including during construction of Phase 2 that overlaps with Phase 1 project operations), the proposed project would not generate criteria air pollutants at levels that would violate air quality standards for reactive organic gases (ROG) and nitrogen oxides (NOx), contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. However, due to the unknowns associated with construction phasing depending on market conditions and other unanticipated factors that could result in increases in criteria pollutant emissions, ROG and NOx emissions are conservatively assumed to exceed the significance thresholds during the construction period (ROG and NOx emissions during construction of Phase 2 that overlaps with Phase 1 project operations would not exceed the significance thresholds). Mitigation measures to (1) minimize construction emissions for off-road construction equipment, (2) require use of low-VOC architectural coatings during construction, (3) minimize construction emissions for on-road construction trucks for the compressed construction schedule, and (4) fund or implement a program that would offset the construction emissions for the compressed construction schedule to substantially lessen the severity of the impact, would reduce the impact of criteria pollutant emissions. However, due to the unknowns associated with implementing an emission offset program and construction phasing depending on market conditions and other unanticipated factors, this impact is conservatively considered significant and unavoidable, with mitigation. (Impact AQ-2a)

During project construction (including during construction of Phase 2 that overlaps with Phase 1 project operations), the proposed project would generate toxic air contaminants (TACs) at levels that would expose either offsite or onsite sensitive receptors to substantial pollutant concentrations. The health risk assessment conducted for the proposed project determined that impacts associated with excess cancer risk at both offsite and onsite receptors would exceed significance thresholds without mitigation. Mitigation measures to (1) minimize construction emissions for off-road construction equipment, (2) require emission reductions for diesel backup generators, and (3) require installation of MERV 13 filters at the onsite daycare facility would reduce the impact on offsite and onsite sensitive receptors. However, due to the unknowns associated with construction phasing that depend on market conditions and other unanticipated factors that could result in increases in exposure and health risks, health risks at offsite receptor locations are conservatively assumed to still exceed the significance thresholds, and impacts would therefore be considered significant and unavoidable, with mitigation. (Impact AQ-4)

The proposed project, in combination with past, present, and reasonably foreseeable future development in the project area, would contribute to cumulative regional air quality impacts and cumulative health risk impacts on sensitive receptors. Mitigation measures to (1) minimize construction emissions for off- and on-road equipment and vehicles, (2) require use of low-VOC architectural coatings, (3) minimize construction emissions for on-road construction trucks for the compressed construction schedule, (4) fund or implement a program that would offset the construction emissions for the compressed construction schedule to substantially lessen the severity of the impact, (5) require emission reductions for diesel back-up generators, and (6) require installation of MERV 13 filters at the onsite daycare facility would reduce regional air quality impacts and cumulative health risk impacts on sensitive receptors. However, due to the unknowns associated with implementing an emission offset program and the unknowns associated with construction phasing depending on market conditions and other unanticipated factors which could result in increased exposure and health risks, this impact is conservatively considered significant and unavoidable, with mitigation. (Impacts C-AQ-1 and C-AQ-2)

4.C Significant Irreversible Environmental Impacts

In accordance with CEQA section 21100(b)(2)(B) and CEQA Guidelines section 15126.2(c), an EIR must identify any significant irreversible environmental changes that could result from implementation of the proposed project. This may include current or future uses of nonrenewable resources, and secondary or growth-inducing impacts that commit future uses of nonrenewable 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 assure that such current consumption is justified. In general, such irreversible commitments include resources such as energy consumed and construction materials used in construction of a proposed project, as well as the energy and natural resources (notably water) that would be required to sustain a project and its inhabitants or occupants over the usable life of the project.

Construction of the proposed project would require the use of energy, including energy produced from nonrenewable resources, and energy would be consumed during the operational period of the proposed project. Construction would also require the commitment of construction materials, such as steel, aluminum, and other metals, concrete, masonry, lumber, sand and gravel, and other such materials, as well as water. The proposed project would commit future generations to an irreversible commitment of energy, primarily in the form of fossil fuels for heating and cooling of buildings, for automobile and truck fuel, and for energy production. The project would require an ongoing commitment of potable water for building occupants and landscaping.

New buildings in California are required to conform to energy conservation standards specified in California Code of Regulations title 24, which are among the most stringent in the United States. The standards establish energy budgets for different types of residential and nonresidential buildings with which all new buildings must comply. In addition, to ensure that all buildings are healthy, sustainable places to live, work, and learn, the San Francisco Green Building Code requirements are designed to reduce energy and water use, divert waste from landfills, encourage alternate modes of transportation, and support the health and comfort of building occupants in San Francisco. New construction in San Francisco must meet all applicable California and local building codes, provide onsite facilities for recycling and composting, and meet the City's green building requirements tied to the Leadership in Energy and Environmental Design and GreenPoint Rated green building rating systems, all of which would ensure that natural resources are conserved or recycled to the maximum extent feasible and that greenhouse gas emissions resulting from the project would be minimized. Even with implementation of conservation measures, the consumption of natural resources, including electricity and natural gas, would generally increase with implementation of the proposed project. However, the proposed project would not involve the wasteful, inefficient, or unnecessary consumption of energy resources, as discussed in the initial study (see Appendix B, Initial Study, Section E.20, Energy, p. B-126). Overall, this development would be expected to use less energy and water over the lifetime of the proposed buildings than comparable structures not built to these same standards.

As further described in SEIR Appendix B, Initial Study, Section E.13, Utilities and Service Systems, Impact UT-1, p. B-59, while the proposed project would incrementally increase the demand for water in San Francisco, the proposed project would not make a considerable contribution to a cumulative impact on water supply, and the impact would be less than significant. While potable water use would increase, the proposed project would be designed to incorporate water-conserving measures, such as low-flush toilets and urinals, as required by the San Francisco Green Building Ordinance and the City's Non-potable Water Ordinance. During construction activities, water may be used for soil compaction and dust control activities. However, as discussed under SEIR Section 3.D, Air Quality, San Francisco Public Works Code article 21 restricts the use of potable water for soil compaction and dust control activities undertaken in conjunction, unless permission is obtained from the San Francisco Public Utilities Commission. Therefore, while the consumption of water would increase as the result of construction and operation of the proposed project, the proposed project would not involve the wasteful, inefficient, or unnecessary use of water resources, as discussed in SEIR Appendix B, Initial Study.

Development of the proposed project, an infill project within a developed urban area, would not substantially alter the pattern of land use or transportation in the project vicinity and, therefore, would not commit future generations of the project site and vicinity to any particular land use or transportation pattern, nor would it mean that the project site could not be feasibly redeveloped again at some unknown date in the future.

4.D Areas of Known Controversy and Issues to Be Resolved

On October 10, 2018, the San Francisco Planning Department issued a notice of preparation (NOP) of an EIR on the proposed Balboa Reservoir project and made the NOP available on its website. SEIR Chapter 1, Introduction, describes the public review process and summarizes the comments received on the NOP. The NOP was sent to governmental agencies, organizations, and persons interested in the proposed project to initiate the 30-day public scoping period for this SEIR, which started on October 10, 2018, and ended on November 12, 2018. A scoping meeting was held on October 30, 2018, to solicit comments on the scope of this SEIR, including the initial study.

Based on the comments received, controversial issues for the proposed project include:

- The maximum number of housing units that should be analyzed in the subsequent EIR, either as a variant of the proposed project or an alternative to the proposed project;
- Use of the site for other potential land uses such as expansion of City College or preserving the site as open space;
- Sufficiency of impact analysis in a subsequent EIR;
- Impacts related to affordable housing and jobs-housing balance;
- Effects of project operations on public transportation, pedestrian access, and vehicle traffic;
- Secondary environmental effected related to displacement of City College parking currently at the project site and changes in parking availability during operations;
- Impacts from exposure to air pollutants during construction and operation;
- Cumulative impacts resulting from construction of the proposed project and other adjacent projects;
- Effects of construction or operational noise on surrounding educational facilities;
- Effects of the project on public services, including emergency response;
- Sufficiency of existing or proposed utilities to support proposed project; and
- Aesthetic effects of the proposed development, including height of buildings compared to surrounding areas including Westwood Park.

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CHAPTER 5
Variants

The project sponsor (Reservoir Community Partners LLC) has requested that this subsequent environmental impact report (SEIR) include an environmental analysis of variants to the Developer's Proposed Option. Variants are variations of the proposed project at the same project site, with the same objectives, background, and development controls, but with a specific variation that may or may not reduce environmental impacts. Therefore, this chapter describes and analyzes the associated environmental impacts for the following four variants to the proposed project:

- **Variant 1, Aboveground Public Parking**, would locate the 750-space public parking garage above grade on Blocks A and B, with residential units wrapped around the garage.
- **Variant 2, South Street Alignment and Aboveground Public Parking at North End of Site**, would shift South Street to the southernmost portion of the site and locate the 750-space public parking garage above grade on Block G, with residential units wrapped around the garage.
- **Variant 3, Assumes Pedestrians and Bicycles Would Not Access the Site via San Ramon Way**.
- **Variant 4, North Street Extension**, would shift the offsite north access road from Frida Kahlo Way to align with the project site's North Street.

These variants modify limited features or aspects of the project, unlike the alternatives to the project (described and analyzed in SEIR Chapter 6, Alternatives), which analyze different approaches to developing the project site to address significant impacts that would result from the project. All four variants are being considered by Reservoir Community Partners LLC for the Developer's Proposed Option, while Variant 4 is the only variant under consideration for the Additional Housing Option. Each variant would be available for selection, including potentially a combination of variants, by the project sponsor and decision makers as part of an approval action.

For some environmental topics, the impacts under a variant would be the same as those of the proposed project. However, in some cases, the impacts of the proposed project under a particular variant would differ somewhat from the impacts identified for the proposed project in SEIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in SEIR Appendix B, Initial Study. Unless otherwise stated, all mitigation measures described in Chapter 3 and in the initial study that would be required to reduce impacts associated with the proposed project would also be applicable to each of the variants.

5.A Variant 1: Aboveground Public Parking

5.A.1 Description

Variant 1 would not include changes to the land use program, intensity of development, or street configuration for the Developer's Proposed Option. Under this variant, the 750-space multilevel public parking garage would be constructed above grade instead of below grade on Blocks A and B and would be wrapped by housing. As a result, some building components at Blocks A and B would be taller than the Developer's Proposed Option. However, as shown in **Figure 5-1, Variant 1 Site Plan and Height Ranges**, the maximum height (seven stories) would not change between the Developer's Proposed Option and Variant 1; rather, under this variant, it is anticipated that the entirety of Blocks A and B would be built to a height of seven stories (78 feet). As with the Developer's Proposed Option, vehicle access to the public parking garage under this variant would be from South Street (see **Figure 5-2, Variant 1 Parking Facilities Plan**).

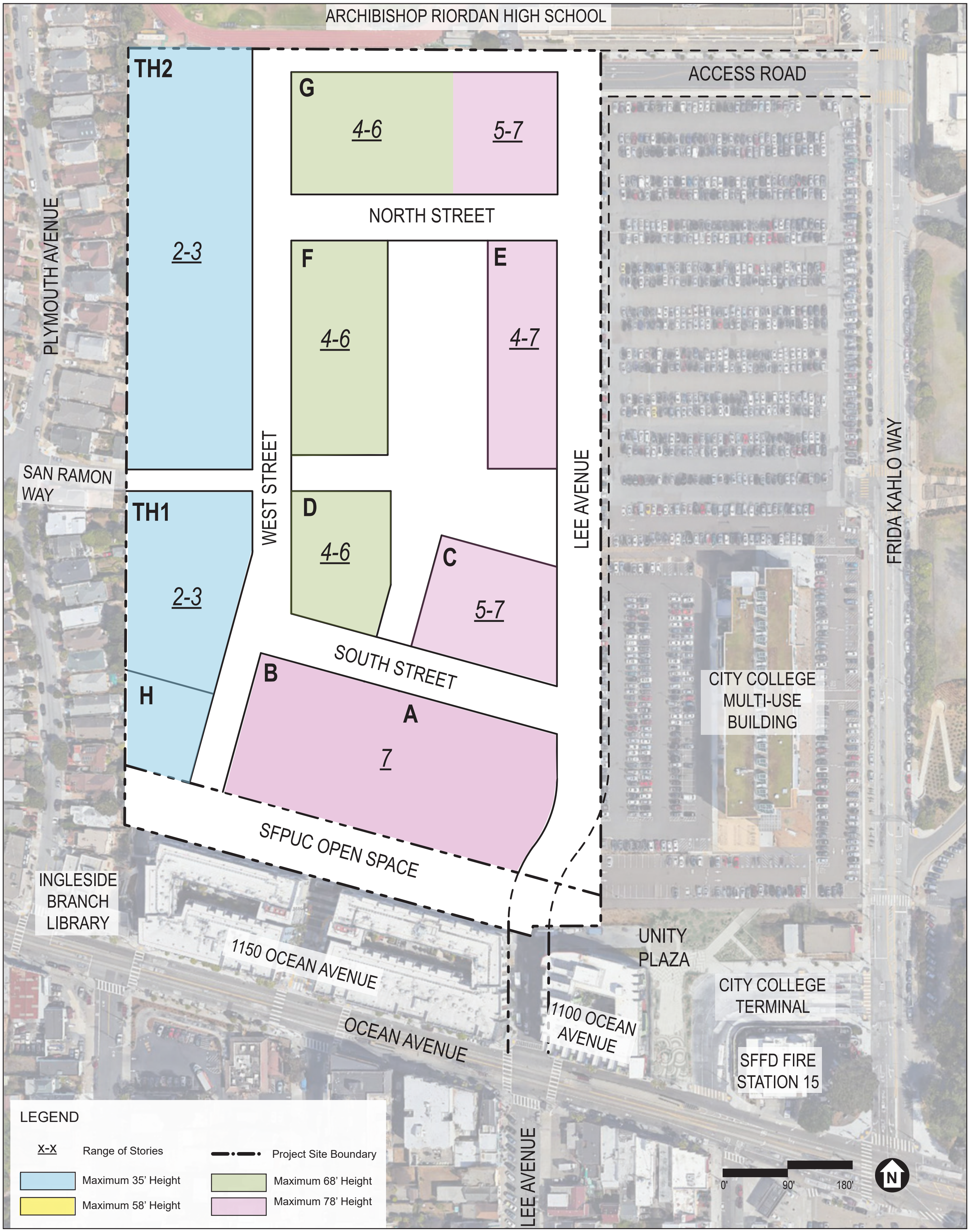
Under Variant 1, demolition of the berm, grading, excavation, construction of site infrastructure, and vertical construction activities would have the same phases and timing as the Developer's Proposed Option. The variant would not change aspects of the Developer's Proposed Option related to demolition, site preparation, and the construction of the internal circulation, open space, or other improvements. However, the cut and fill for Variant 1 would require a net import of approximately 9,000 cubic yards of soil. The haul truck trips under Variant 1 would be approximately 15 percent of the 56,000 cubic yards for the Developer's Proposed Option. No additional construction beyond what is assumed for the Developer's Proposed Option would be required. Under this variant, the project footprint would not be altered, and no additional excavation would be necessary.

5.A.2 Impact Analysis

Environmental Topics Not Requiring Further Analysis under Variant 1

Under this variant, the 750-space multilevel public parking garage would be constructed above grade instead of below grade on Blocks A and B and would be wrapped by housing. Although some building components at Blocks A and B would be taller than the Developer's Proposed Option, the overall site plan, mix of land uses, and intensity of development would be the same as the Developer's Proposed Option. Therefore, land use and land use planning impacts would be unchanged from those of the Sponsor's Proposed Option and would be less than significant.

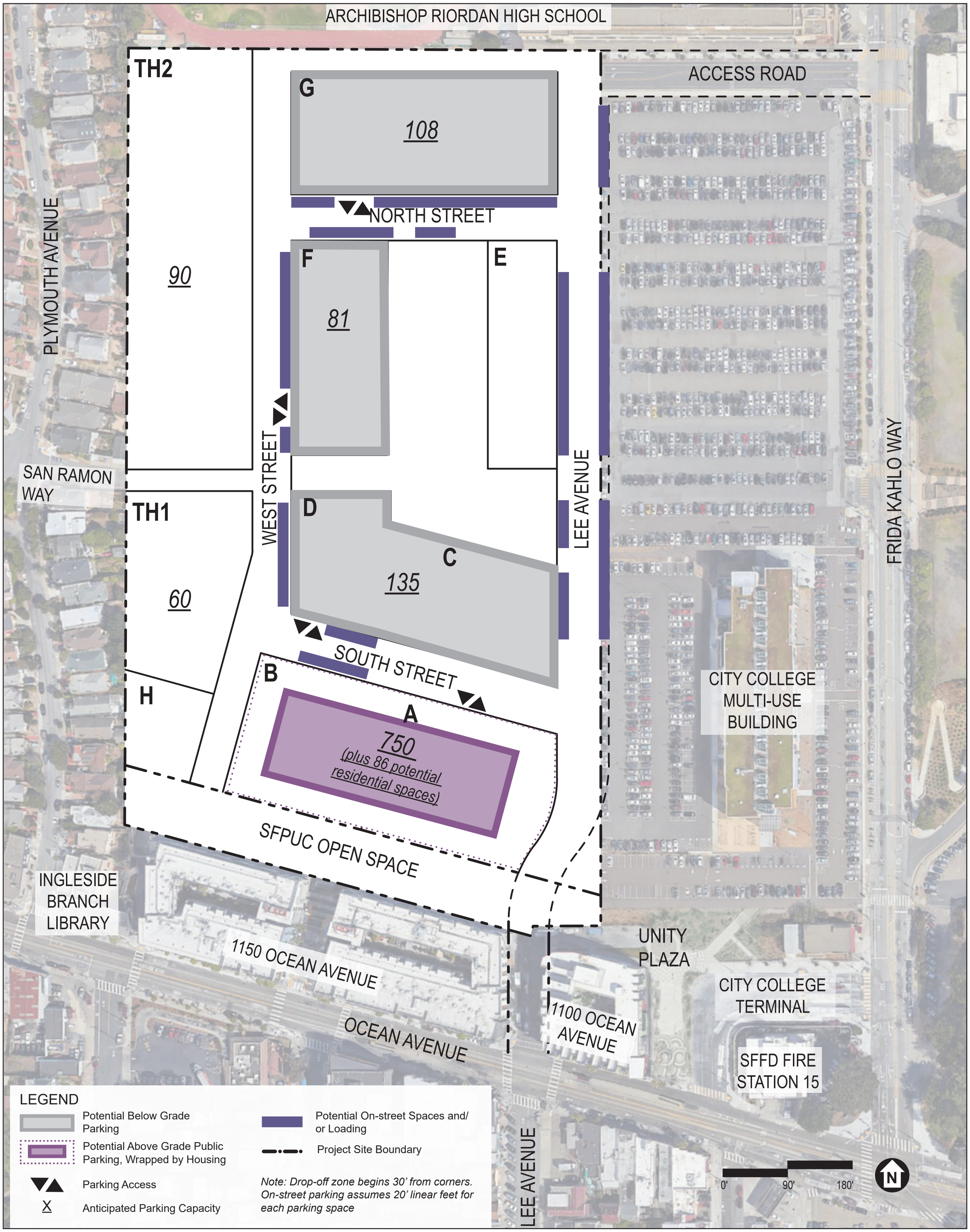
Variant 1 and the Developer's Proposed Option would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space). Variant 1 would not change the number of residential units or space allocation of the retail and community facilities/childcare uses. As a result, the number of onsite residents, employees, and construction-related employees would be the same for Variant 1 and the Developer's Proposed Option, as would the conclusions regarding less-than-significant impacts associated with population and housing. Impacts on public services, utilities and service systems, and recreation, which are based largely on the increased demand associated with population and housing growth, would be the same under Variant 1 and the Developer's Proposed Option.



SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 5-1
Variant 1 Site Plan and Height Ranges



SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 5-2
Variant 1 Parking Facilities Plan

This variant would have similar construction phases and timing as the Developer's Proposed Option and would require similar construction activities. Although this variant would not require excavation for a below-grade public parking garage, the entire site would still require grading and ground disturbance. Therefore, Variant 1 would not result in any meaningful difference in potential physical environmental impacts related to cultural resources, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials because the impact analysis in SEIR Appendix B, Initial Study, considers surface and subsurface impacts across the project site, and the analysis, mitigation measures, and conclusions would be the same.

With respect to wind, Variant 1 would result in a four- to five-story change in building height, from two to three stories up to seven stories, at the western edge of Block B, facing West Street. This would be a step up in height greater than under the Developer's Proposed Option and potentially greater than under the Additional Housing Option, depending on the ultimate design of specific buildings. This exposed building wall would be 40 to 50 feet tall and would face into the prevailing westerly winds. This exposed building wall could result in somewhat greater winds at its base, and particularly at the southwest corner of the building, than would be the case under the two principal development options. However, the Blocks A and B building under this variant would not be considered to extend substantially above adjacent structures and would result in a seven-story building proximate to the existing five-story building at 1200 Ocean Avenue. Therefore, it would not be expected to result in pedestrian wind hazards, and therefore wind effects would be less than significant, as with both project options.

Concerning shadow, the increased building height under Variant 1, compared to the Developer's Proposed Option, would occur primarily at the western end of the Blocks A and B building. Because shadow would only reach Unity Plaza very late in the day in late spring and early summer when shadows are already near their maximum length, this variant would not substantially affect shadows cast on Unity Plaza. Other shadow cast under Variant 1 would be similar to that cast by the Developer's Proposed Option. Shadow effects would be less than significant, as with both project options.

All mitigation measures identified for the topics above under the Developer's Proposed Option would be applicable to this variant. Therefore, these environmental topics require no further analysis under Variant 1.

Transportation and Circulation

Demolition, excavation, site grading, and construction activities under Variant 1 would be conducted according to the same construction phases as under the Developer's Proposed Option. However, the excavation assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur under this variant. Therefore, Variant 1 would reduce the number of construction-related truck traffic compared to the Developer's Proposed Option. As discussed under Impact TR-1 for the Developer's Proposed Option, this variant would also use the same construction truck traffic routes (e.g., I-280 and Ocean Avenue and Frida Kahlo Way to access the project site). The phased impacts associated with construction-related traffic of the Developer's Proposed Option are described under Impact TR-1. Impact TR-1's impact analysis would be applicable to this variant because the amount of construction truck traffic specific to the implementation of this variant would have the same ***less than significant*** conclusion.

Variant 1 would not result in substantial increases in operational VMT because it would have the same mix of land use types (i.e., residential, retail, childcare facility, community space, open space) and would not alter the development scenario for the Developer's Proposed Option. Therefore, Variant 1 would have a ***less-than-significant*** impact on VMT.

The modifications to the parking program under this variant (i.e., above-grade parking instead of below-grade parking) would not result in any changes to the number/type of parking spaces provided or vehicular access or circulation patterns. There would be no change to transit, pedestrian, bicycle, commercial or passenger loading, or emergency access effects from Variant 1 compared to the Developer's Proposed Option. Operational-related project-level and cumulative transportation and circulation impacts under Variant 1 would be substantially the same as those discussed for the Developer's Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Thus, the operational-related mitigation measure identified for the Developer's Proposed Option would be applicable to Variant 1 (Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay [under Impact C-TR-4], p. S-3.B-96). Existing plus project and cumulative loading impacts along Lee Avenue between the project site and Ocean Avenue would be ***significant and unavoidable***. Impacts associated with cumulative transit delay would be ***significant and unavoidable with mitigation***.

Based on the above, project-level and cumulative transportation and circulation impacts under Variant 1 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Implementation of the Variant 1 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

Noise and Vibration

Demolition, excavation, site grading, and construction activities under Variant 1 would be conducted according to the same construction phases as under the Developer's Proposed Option. Therefore, this variant would result in the same amount of construction noise as the proposed project and Mitigation Measure M-NO-1, Construction Noise Control Measures, p. 3.C-30, would apply to Variant 1. Excavation assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur under this variant. Therefore, Variant 1 would reduce the number of construction-related truck trips and their associated roadside noise level increases compared to the Developer's Proposed Option. Implementation of construction-related noise control measures in Mitigation Measure M-NO-1 would reduce the project's temporary or periodic increases in ambient noise levels to the extent feasible. Similar to the proposed project options, given that there would still be periods of peak construction activity exceeding the "Ambient + 10 dBA" standard at the nearest sensitive receptor locations for occasional periods when activity would be conducted at the property lines nearest to receptors, these occurrences would occur in all three phases of construction over an extended period of up to six years. Construction noise impacts to noise-sensitive receptors would be ***significant and unavoidable with mitigation***.

Variant 1 would have the same mix of land use types (i.e., residential, retail, childcare facility, community space, open space), same trip generation, and fixed mechanical equipment and would result in the same operational noise impacts. Therefore, Mitigation Measure M-NO-3, Fixed Mechanical Equipment Noise Controls, p. 3.C-36, would apply to Variant 1. Both project-level and cumulative impacts associated with fixed mechanical noise equipment would be ***less than significant with mitigation***. Based on the above, project-level and cumulative noise impacts under Variant 1 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.C, Noise). Implementation of the Variant 1 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

Air Quality

Demolition, excavation, site grading, and construction activities under Variant 1 would be conducted according to the same construction phases as under the Developer's Proposed Option. However, the excavation assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur under this variant. Therefore, Variant 1 would reduce the number of construction-related truck trips and their associated criteria pollutant and TAC emissions compared to the Developer's Proposed Option. As discussed under Impact AQ-2a, p. 3.D-44, construction-related emissions for the Developer's Proposed Option would not exceed any significance thresholds. Therefore, this would be a less-than-significant impact. However, as discussed in the "Methods for Analysis of Impacts," p. 3.D-29, and in SEIR Chapter 2, Project Description, depending on market conditions and other unanticipated factors, the project may be constructed over a shorter timeframe and Phases 1 and 2 may occur concurrently instead of sequentially; such phasing may result in full project construction over three years instead of six years. If this were to occur, the same amount of construction equipment and hours of operation would be required, but the activity would be compressed into a shorter duration. Therefore, average daily construction emissions would increase. Under this compressed schedule, and as discussed under Impact AQ-2a, p. 3.D-44, construction-related emissions of NOx for the Developer's Proposed Option would exceed significance thresholds in 2022. Therefore, this would be a significant impact. In addition, as discussed under Impact AQ-2b, p. 3.D-56, overlapping construction and operational emissions for the Developer's Proposed Option would exceed significance thresholds for NOx in 2024. Therefore, this would be a significant impact. The exceedances are driven by off-road construction equipment and vendor trucks. For example, in 2023, off-road construction equipment and vendor trips represent approximately 49 percent and 47 percent of total unmitigated NOx emissions, respectively, for the Developer's Proposed Option. Haul trucks only represent 12 percent of total NOx emissions in 2024 for the Developer's Proposed Option. Therefore, the reduction in haul truck emissions associated with Variant 1 is not anticipated to reduce NOx to below the thresholds of significance. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 1 (i.e., Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-2b, Low-VOC Architectural Coatings, p. 3.D-49; M-AQ-2c, On-Road Truck Emissions Minimization for the Compressed Construction Schedule, p. 3.D-52; and M-AQ-2d, Offset Construction and Operational Emissions for the Compressed Construction Schedule, p. 3.D-53). Similar to the proposed project, Impact AQ-2a would be ***significant and unavoidable with mitigation***, while Impact AQ-2b would be ***less than significant with mitigation***.

With regard to exposure of sensitive receptors to substantial pollutant concentrations associated with project-related TAC emissions, construction-related TAC emissions would be the same as under the Developer's Proposed Option with the exception of haul truck TAC emissions. Operational TAC emissions and exposure would be identical to the Developer's Proposed Option. However, lifetime excess cancer risks are driven by off-road construction equipment, which represents over 90 percent of total construction-related lifetime excess cancer risk and average annual PM2.5 concentrations at the MEISR locations. As discussed under Impact AQ-4, p. 3.D-81, for receptors currently located in the APEZ, the excess cancer risk impact on offsite receptors under the Developer's Proposed Option would be significant and unavoidable with mitigation. Because haul trucks represent a small percentage of total DPM emissions and associated cancer risk, the reduction in haul truck emissions associated with Variant 1 are not anticipated to reduce DPM emissions and cancer risks to below the thresholds of significance. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 1 (i.e., Mitigation Measures M-AQ-2a, p. 3.D-48; M-AQ-4a, p. 3.D-71; and M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72). Similar to the proposed project, this impact would be ***significant and unavoidable with mitigation***.

Variant 1 would not result in substantial increases in operational criteria pollutant or TAC emissions because it would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space), same trip generation and a would not result in new or different operational emissions sources than those analyzed under the Developer's Proposed Option.

Based on the above, project-level and cumulative air quality impacts under Variant 1 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.D, Air Quality). Implementation of the Variant 1 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

5.B Variant 2: South Street Alignment and Aboveground Public Parking at North End of Site

5.B.1 Description

Variant 2 would have the same mix of land uses, square footages, and construction and operational characteristics as the Developer's Proposed Option, except the 750-space multilevel public parking garage would be constructed aboveground on Block G towards the north end of the site and would be wrapped by housing. South Street would be shifted south and occupy SFPUC's 80-foot-wide strip of land located along the southern edge of the site and south of Blocks A and B. As a result of this change in configuration, Blocks A, C, and D would have slightly different footprints. The maximum height (seven stories) would not change between the Developer's Proposed Option and Variant 2.

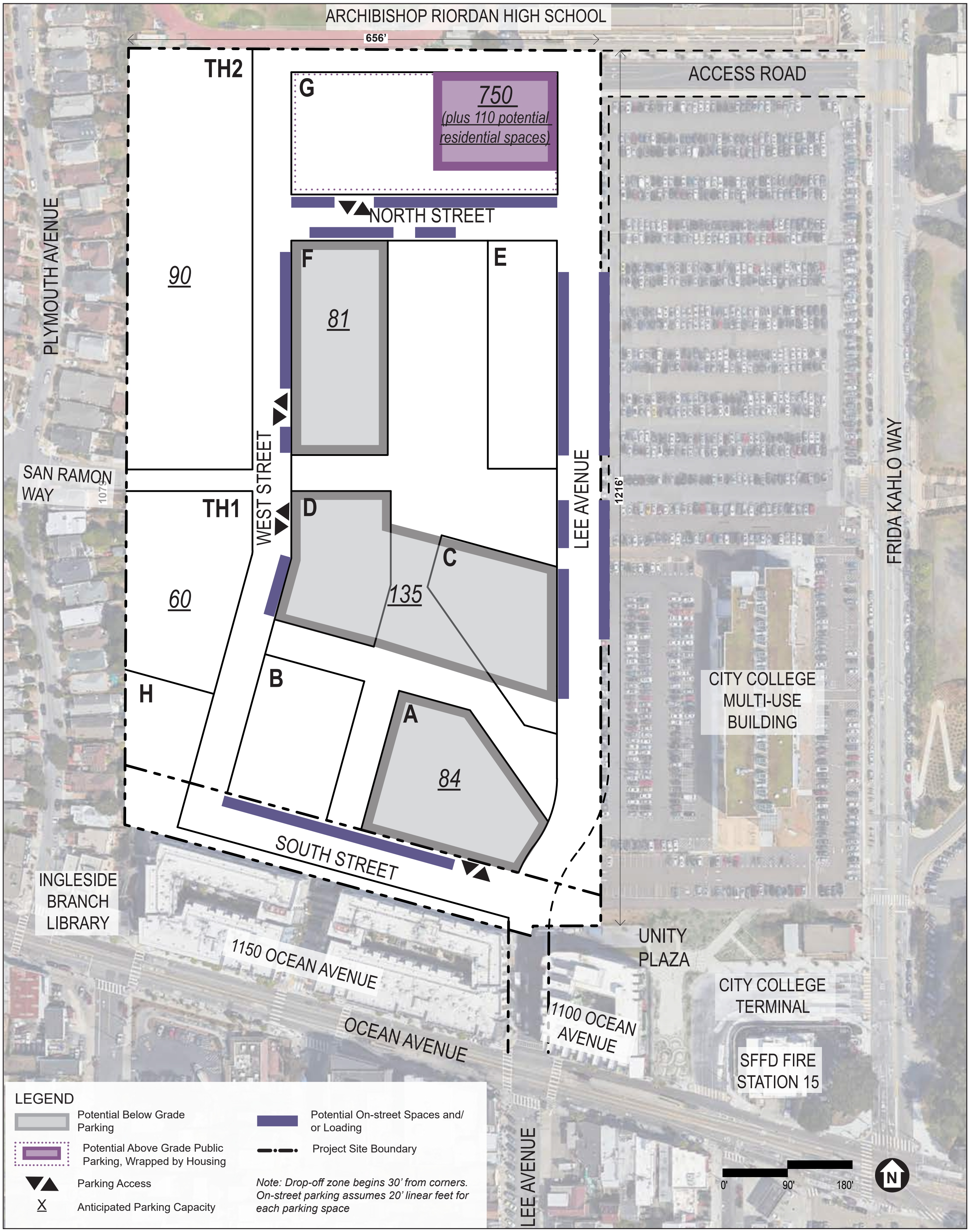
As with the Developer's Proposed Option, vehicle access to parking on Block G would be from North Street under Variant 2. Because of the South Street alignment under this variant, vehicle access to parking on Block A would be from the north side of South Street instead of the south side under the Developer's Proposed Option (see **Figure 5-3, Variant 2 Site Plan and Parking Facilities Plan**).

Under Variant 2, demolition of the berm, grading, excavation, construction of site infrastructure, and vertical construction activities would have the same phases and timing as the Developer's Proposed Option. The variant would not change aspects of the Developer's Proposed Option related to demolition, excavation, site preparation, and the construction of the internal circulation, open space, or other improvements. The cut-and-fill excavation to a depth of approximately 20 feet assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur under this variant. However, the cut and fill for Variant 2 would require a net import of approximately 9,000 cubic yards of soil. The haul truck trips under Variant 2 would be approximately 15 percent of the 56,000 cubic yards for the Developer's Proposed Option. No additional construction beyond what is assumed for the Developer's Proposed Option would be required. Under this variant, the project footprint would not be altered, and no additional excavation would be necessary.

5.B.2 Impact Analysis

Environmental Topics Not Requiring Further Analysis under Variant 2

Variant 2 and the Developer's Proposed Option would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space). Variant 2 would not change the number of residential units or space allocation of the retail and community facilities/child-care uses. As a result, the number of onsite residents, employees, and construction-related employees would be the same for Variant 2 and the Developer's Proposed Option, as would the conclusions regarding less-than-significant impacts associated with population and housing. Impacts on public services, utilities and service systems, and recreation, which are based largely on the increased demand associated with population and housing growth, would be the same under Variant 2 and the Developer's Proposed Option.



SOURCE: Van Meter Williams Pollack LLP, 2019

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Figure 5-3
Variant 2 Site Plan and Parking Facilities Plan

This variant would have the same construction phases and timing as the Developer's Proposed Option and would require similar construction activities. Construction related to the public parking garage would occur during Phase 2, as under the Developer's Proposed Option, except it would be at the north end of the site. Although this variant would not require excavation for a below-grade public parking garage, the entire site would still require grading and ground disturbance. Therefore, Variant 2 would not result in any meaningful difference in potential physical environmental impacts related to cultural resources, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials because the impact analysis in SEIR Appendix B, Initial Study, considers surface and subsurface impacts across the project site and the analysis, mitigation measures, and conclusions would be the same.

Wind effects of Variant 2 would be essentially the same as those of the Developer's Proposed Option because building heights would be the same. Although the configurations of Blocks A and C, and to a lesser extent, Block D, would vary from those under the Developer's Proposed Option, these changes would result in only incremental changes in pedestrian winds. In particular, Block C would present less of its building façade directly into the prevailing westerly winds, thereby likely resulting in incrementally better pedestrian wind conditions around the base of the building. The change in Block A configuration would affect the trailing edge of the building relative to the prevailing winds, and would not substantially affect pedestrian wind conditions. As with both project options, no wind hazards would be anticipated, and wind effects would be less than significant.

Shadow on Unity Plaza would be unchanged compared to that with the Developer's Proposed Option because project shadow on the plaza would be entirely the result of the project's southerly and southeasterly building facades and corners, and these would not change under Variant 2. Other shadow cast under Variant 2 would be similar to that cast by the Developer's Proposed Option. As with both project options, shadow effects would be less than significant.

All mitigation measures identified for the topics above under the Developer's Proposed Option would be applicable to this variant. Therefore, these environmental topics require no further analysis under Variant 2.

Transportation and Circulation

Demolition, excavation, site grading, and construction activities under Variant 2 would be conducted according to the same construction phases as under the Developer's Proposed Option. Excavation assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur. Construction-related truck trips for the import of soil would be less than the truck trips associated with the soils export for the Developer's Proposed Option. As discussed under Impact TR-1 for the Developer's Proposed Option, this variant would use the same construction truck traffic routes (e.g., I-280 and Ocean Avenue and Frida Kahlo Way to access the project site). The phased and less-than-significant impacts associated with construction-related traffic of the Developer's Proposed Option are described under Impact TR-1. Impact TR-1's analysis would be applicable to this variant because the amount of construction truck traffic specific to the implementation of this variant would have the same ***less than significant*** conclusion.

Variant 2 would not result in substantial increases in operational VMT because it would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space) and would not alter the development scenario for the Developer's Proposed Option. Therefore, Variant 2 would have a ***less-than-significant*** impact on VMT.

The proposed modifications to the parking program under this variant (i.e., relocating the garage from the south end of the site to the north end of the site) would not result in any changes to the number/type of parking spaces provided, and as with the Developer's Proposed Option, vehicle access to parking on Block G would be from North Street under Variant 2. The relocation of the proposed public parking garage to the north end of the site would change circulation patterns for people parking in the garage. For example, people driving to the public parking on Block G would access the site from Frida Kahlo Way instead of Lee Avenue extension.

Under Variant 2, vehicle access to parking on Block A would be from the north side of South Street. Vehicle access to parking on Block A would be located on the opposite end of the block from the proposed on-street passenger loading area near the proposed entrance to the childcare facility, thereby reducing potential for conflicts between vehicles and people conducting drop-off/pick-up. However, as shown in Figure 5-3, p. 5-10, the proposed driveway is located near the intersection of South Street and Lee Avenue, increasing potential for vehicle queues to spill back and affect operations at the nearby intersection compared to the Developer's Proposed Option. Given the conceptual site plan and street network within the project site, the proposed variant street network design would be subject to more detailed design review, and the proposed driveway should be located to provide adequate sight distance for drivers, people walking, and bicyclists while accommodating the expected vehicle queue without spilling back onto South Street or Lee Avenue.

Overall, these site access and circulation changes under Variant 2 would not change transit, pedestrian, bicycle, commercial or passenger loading, or emergency access effects. Operational-related project-level and cumulative transportation and circulation impacts under Variant 2 would be substantially the same as those discussed for the Developer's Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Thus, all operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 2 (i.e., Mitigation Measure M-C-TR-4, p. 3.B-96). Significant and unavoidable secondary loading impacts would be slightly less substantial under Variant 2 than with the proposed project options due to a reduction in project-generated trips at the Ocean Avenue/Lee Avenue intersection. However, existing plus project and cumulative loading impacts along Lee Avenue between the project site and Ocean Avenue would be ***significant and unavoidable***. Impacts associated with cumulative transit delay would be ***significant and unavoidable with mitigation***.

Based on the above, project-level and cumulative transportation and circulation impacts under Variant 2 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Implementation of Variant 2 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

Noise and Vibration

Demolition, excavation, site grading, and construction activities under Variant 2 would be conducted according to the same construction phases as under the Developer's Proposed Option. Because South Street would be shifted to occupy SFPUC's 80-foot-wide right-of-way located along the southern edge of the site, construction would occur closer to the sensitive receptors located at 1100–1150 Ocean Avenue. Therefore, construction noise impacts at this receptor would be increased to a similar level as those predicted to occur at sensitive receptors along Plymouth Avenue to the west of the project site. The excavation assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur under this variant. While construction-related truck trips associated with soil import would be substantially less than the truck trips associated with the soil export under the Developer's Proposed Option, truck noise would be overshadowed by that contributed by off-road equipment. Therefore, this variant would result in the same amount of construction noise as the proposed project and Mitigation Measure M-NO-1, p. 3.C-30, would apply to Variant 1, although the number of receptors exposed to the maximum predicted noise level would be increased. Implementation of construction-related noise control measures in Mitigation Measure M-NO-1 would reduce the project's temporary or periodic increases in ambient noise levels to the extent feasible. Similar to the proposed project options, given that there would still be periods of peak construction activity exceeding the "Ambient + 10 dBA" standard at the nearest sensitive receptor locations for occasional periods when activity would be conducted at the property lines nearest to receptors, these occurrences would occur in all three phases of construction over an extended period of up to six years. Construction noise impacts to noise-sensitive receptors would be ***significant and unavoidable with mitigation***.

Variant 2 would have the same mix of land use types (i.e., residential, retail, childcare facility, community space, open space), same trip generation, and fixed mechanical equipment and would result in the same operational noise impacts. Therefore, Mitigation Measure M-NO-3, p. 3.C-36, would apply to Variant 2. Both project-level and cumulative impacts associated with fixed mechanical noise equipment would be ***less than significant with mitigation***. Based on the above, project-level and cumulative noise impacts under Variant 2 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.C, Noise). Implementation of the Variant 2 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

Air Quality

Demolition, excavation, site grading, and construction activities under Variant 2 would be conducted according to the same construction phases as under the Developer's Proposed Option. However, the excavation assumed for the below-grade public parking garage for the Developer's Proposed Option would not occur under this variant. Construction-related truck trips for soil import would be less than the Developer's Proposed Option. Therefore, Variant 2 would reduce the number of construction-related truck trips and their associated criteria pollutant and TAC emissions compared to the Developer's Proposed Option. As discussed under Impact AQ-2a, p. 3.D-44, construction-related emissions for the Developer's Proposed Option would not exceed significance any thresholds. Therefore, this would be a less-than-significant impact. However, as discussed in the "Methods for

Analysis of Impacts," p. 3.D-44 and 3.D-56, and in SEIR Chapter 2, Project Description, the project may be constructed over a shorter timeframe, resulting in full project construction over three years instead of six years. If this were to occur, the same amount of construction equipment and hours of operation would be required, but the activity would be compressed into a shorter duration. Therefore, average daily construction emissions would increase. Under this compressed schedule, and as discussed under Impact AQ-2a, pp. 3.D-44, construction-related emissions of NOx for the Developer's Proposed Option would exceed significance thresholds in 2022. Therefore, this would be a significant impact. In addition, as discussed under Impact AQ-2b, p. 3.D-56, overlapping construction and operational emissions for the Developer's Proposed Option would exceed significance thresholds for NOx in 2024. Therefore, this would be a significant impact.

The exceedances are driven by off-road construction equipment and vendor trucks. For example, in 2024, off-road construction equipment and vendor trips represent approximately 49 percent and 47 percent of total unmitigated NOx emissions, respectively, for the Developer's Proposed Option. Haul trucks only represent 12 percent of total NOx emissions in 2024 for the Developer's Proposed Option. Therefore, the reduction in haul truck emissions associated with Variant 2 are not anticipated to reduce NOx to below the thresholds of significance. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 2 (i.e., Mitigation Measures M-AQ-2a, p. 3.D-48; M-AQ-2b, p. 3.D-49; M-AQ-2c, p. 3.D-52; and M-AQ-2d, p. 3.D-53). Similar to the proposed project, Impact AQ-2a would be ***significant and unavoidable with mitigation***, while Impact AQ-2b would be ***less than significant with mitigation***.

With regard to exposure of sensitive receptors to substantial pollutant concentrations associated with project-related TAC emissions, construction-related TAC emissions would be the same as under the Developer's Proposed Option with the exception of haul truck TAC emissions. Operational TAC emissions and exposure would be identical to the Developer's Proposed Option. However, lifetime excess cancer risks are driven by off-road construction equipment, which represents over 90 percent of total construction-related lifetime excess cancer risk and average annual $PM_{2.5}$ concentrations at the MEISR locations. As discussed under Impact AQ-4, p. 3.D-65, for receptors currently located in the APEZ, the excess cancer risk impact on offsite receptors under the Developer's Proposed Option would be significant and unavoidable with mitigation. Because haul trucks represent a small percentage of total DPM emissions and associated cancer risk, the reduction in haul truck emissions associated with Variant 2 are not anticipated to reduce DPM emissions and cancer risks to below the thresholds of significance. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 2 (i.e., Mitigation Measures M-AQ-2a, p. 3.D-48; M-AQ-4a, p. 3.D-71; and M-AQ-4b, p. 3.D-72). Similar to the proposed project, this impact would be ***significant and unavoidable with mitigation***.

Variant 2 would not result in substantial increases in operational criteria pollutant or TAC emissions because it would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space), same trip generation and a would not result in new or different operational emissions sources than those analyzed under the Developer's Proposed Option.

Based on the above, project-level and cumulative air quality impacts under Variant 2 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.D, Air Quality). Implementation of the Variant 2 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

5.C Variant 3: Assumes Pedestrians and Bicycles Would Not Access the Site via San Ramon Way

5.C.1 Description

Under Variant 3, there would be no pedestrian or bicycle facilities connecting the project site to San Ramon Way. The site plan, building footprints, building heights, and construction characteristics would be the same as the Developer's Proposed Option. No additional construction beyond what is assumed for the project would be required.

5.C.2 Impact Analysis

Environmental Topics Not Requiring Further Analysis under Variant 3

Variant 3 would not change the site plan, mix of land uses, building footprints, building heights, residential unit counts, or the space allocation of uses of the Developer's Proposed Option. The construction activities, equipment, phasing, and durations for Variant 3 would be the same as the Developer's Proposed Option. Therefore, the physical environmental effects and conclusions related to construction and operation of this variant would be substantially be the same as those identified for the Developer's Proposed Option for the following: population and housing, cultural resources, tribal cultural resources, noise, air quality, greenhouse gas (GHG) emissions, wind and shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials. All mitigation measures identified for these topics for the Developer's Proposed Option would be applicable to Variant 3.

Land Use and Land Use Planning

Similar to the Developer's Proposed Option, Variant 3 would extend a network of pedestrian and bicycle facilities through the project site except at San Ramon Way. Variant 3 could conflict with portions of Balboa Park Station Area Plan objective 5.1 and policy 5.1.1 regarding the creation of new public open spaces. Policy 5.1.1 includes design guidelines for the open space at the Balboa Reservoir site. With respect to adjacent areas, the design guidelines in policy 5.1.1 states: "[d]evelop clearly marked access gates, pedestrian pathways, and visual site lines aligned with the streets of adjoining neighborhoods" and "[p]ay careful attention to the design of edges between the open space and surrounding neighborhoods as well as Riordan High School. It is important to provide access into the park from the surrounding neighborhoods while respecting the privacy of adjacent homes. Trees and shrubs should be planted to provide a buffer between the houses that abut the reservoir site to the west. Entrances to the park should align with existing streets for direct pedestrian access and to extend clear views into the park from public streets."

Currently, there is no direct pedestrian or vehicular access to the project site from the south or west. Thus, the lack of access from the west under Variant 3 would be similar to existing conditions. Not including pedestrian and bicycle access at San Ramon Way could potentially conflict with policy 5.1.1 as this variant would not provide connectivity between the project site's open space and neighborhood to the west. However, conflicts between a proposed project and adopted plans, policies, and regulations do not, in and of themselves, indicate a significant effect on the environment within the context of CEQA. The decision makers will consider other potential inconsistencies with the general plan (of which the area plan is a part) when deciding to approve or disapprove a proposed project. The staff reports and approval motions prepared for the decision makers as part of the entitlements approval process will include a comprehensive project analysis and findings regarding the consistency of the proposed project with applicable plans, policies, and regulations independent of the environmental review process. To the extent that physical environmental impacts may result from such inconsistencies, these impacts are analyzed in the EIR and initial study. Circulation impacts resulting from no pedestrian and bicycle access at San Ramon Way under Variant 3 are analyzed in the following “Transportation and Circulation” section.

Transportation and Circulation

Demolition, excavation, site grading, and construction activities under Variant 3 would be conducted according to the same construction phases as under the Developer’s Proposed Option. Therefore, this variant would result in the same ***less than significant*** construction-related impacts.

Variant 3 would not result in substantial increases in operational VMT because it would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space) and would not alter the development scenario for the Developer’s Proposed Option. Therefore, Variant 3 would have a ***less-than-significant*** impact on VMT.

Pedestrian and bicycle access to the site is not currently provided via San Ramon Way. Compared to the Developer’s Proposed Option, the proposed modifications to site access for people walking and biking (i.e., removing pedestrian and bicycle access at San Ramon Way) would limit access and connectivity for people walking and bicycling to and from the site. Removing pedestrian and bicycle access at San Ramon Way would result in circuitous routing and longer travel distances for people to (or through) the site from the west. Variant 3 would also result in an increased number of people walking and bicycling to the site along Plymouth, Brighton, or Lee avenues, which serve higher volumes of vehicle traffic. Under Variant 3, bicycle and pedestrian access and connectivity to and through the site would be limited and walking and bicycling to areas west of the site would be less convenient than under the Developer’s Proposed Option, but not change the existing condition.

Overall, these site access and circulation changes would not change transit, pedestrian, bicycle, commercial or passenger loading, or emergency access effects from Variant 3. Operational-related project-level and cumulative transportation and circulation impacts under Variant 3 would be substantially the same as those discussed for the Developer’s Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Thus, all operational-related mitigation measures identified for the Developer’s Proposed Option would be applicable to Variant 3 (i.e., Mitigation Measure M-C-TR-4, p. 3.B-96). Existing plus project and cumulative loading impacts along Lee Avenue between the project site and Ocean Avenue would be ***significant and unavoidable***. Impacts associated with cumulative transit delay would be ***significant and unavoidable with mitigation***.

Based on the above, project-level and cumulative transportation and circulation impacts under Variant 3 would be similar to those identified under the Developer’s Proposed Option (see SEIR

Section 3.B, Transportation and Circulation). Implementation of Variant 3 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

5.D Variant 4: North Street Extension

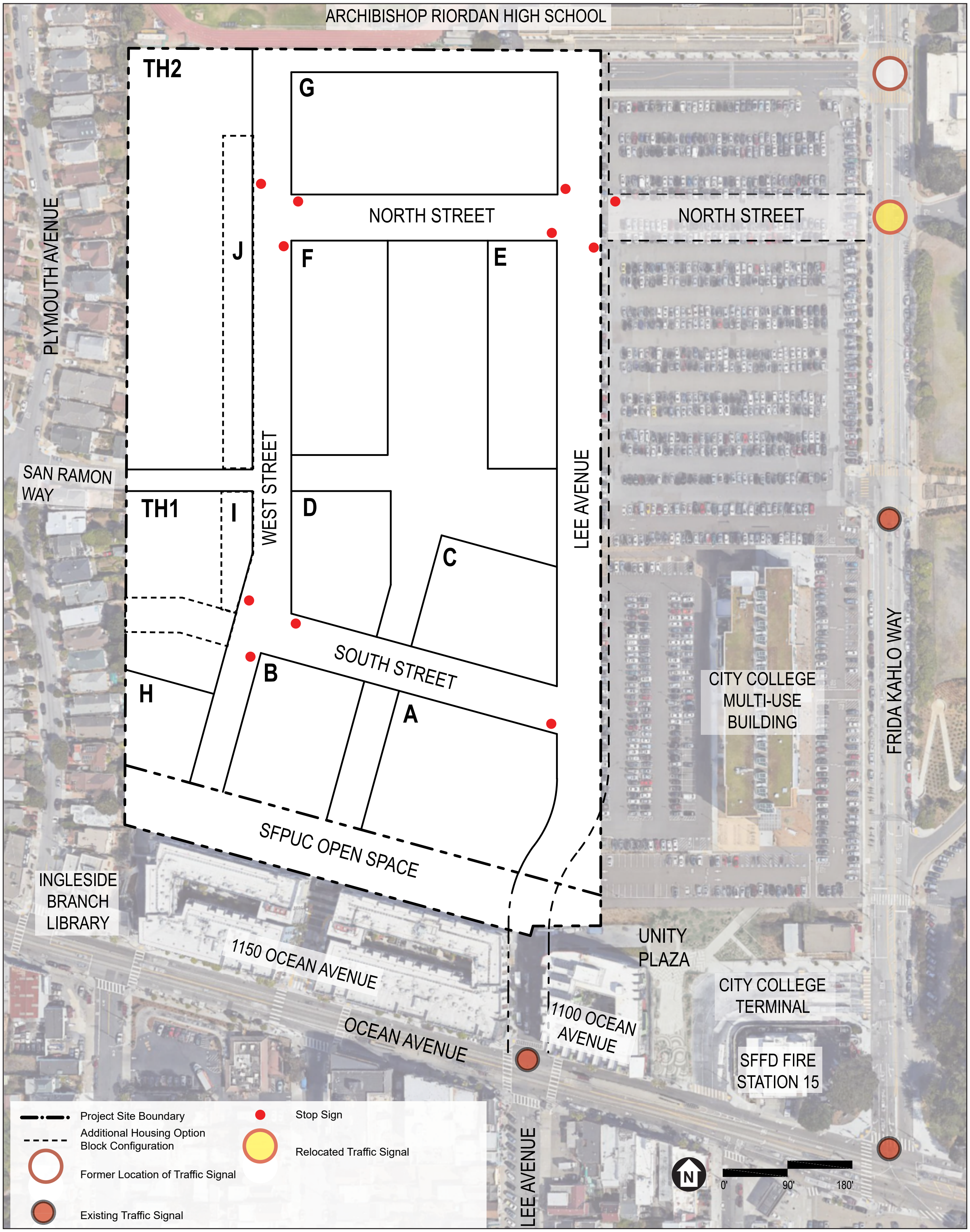
5.D.1 Description

Variant 4 would be applicable to both project options. The Developer's Proposed Option and the Additional Housing Option would have the same configuration under this variant, except North Street would be extended through the east basin site and would connect to Frida Kahlo Way. Under this variant both project options would have the same mix of land uses, square footages, and construction and operational characteristics. Vehicle, bicycle, and pedestrian circulation to and from the site would not change, except instead of the access road along the north side of the east basin, the North Street Extension would provide east–west access from Frida Kahlo Way, as shown in **Figure 5-4, Variant 4 Site Plan**.

The North Street Extension would displace approximately 110 spaces at City College's surface parking lot on the east basin. The loss of the parking spaces would be offset by relocating surface parking spaces to the area currently occupied by the access road at the north end of the east basin. Under Variant 4, the existing east–west access road connecting the west basin to Frida Kahlo Way would be closed off and would require relocating the traffic signal currently at the access road/Frida Kahlo Way intersection south to the new North Street/Frida Kahlo Way intersection. Under Variant 4, the Lee Avenue/North Street intersection would be controlled by a stop sign.

The North Street Extension would include a 10.5-foot-wide vehicle travel lane in each direction, a 5-foot-wide bicycle facility, and 6.5-foot-wide sidewalks on both sides of the street. An 8-foot-wide parking lane would be provided on one or both sides of the street, providing more on-street curb spaces than the proposed project options. The North Street Extension right-of-way would be approximately 72 feet wide. The sidewalks would be buffered from vehicular traffic by a 4-foot-wide planting strip and 2-foot-wide courtesy strip. As with the proposed project options, the street network designs would be required to undergo detailed design and review to ensure that they are designed to meet city design standards. The street designs would be subject to approval by SFMTA, San Francisco Department of Public Works, and the San Francisco Fire Department, along with other city agencies, to ensure that the streets are designed consistent with city policies and design standards. The interior streets would also be regulated by SFMTA with regard to loading and parking spaces.

No additional construction beyond what is assumed for the project would be required. Under Variant 4, the project footprint for both options would not be altered, and no additional height or excavation would be necessary.



SOURCE: Van Meter Williams Pollack LLP, 2019

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Figure 5-4
Variant 4 Site Plan

5.D.2 Impact Analysis

Environmental Topics Not Requiring Further Analysis under Variant 4

Variant 4 would not change the site plan, mix of land uses, building footprints, building heights, residential unit counts, or the space allocation of uses of either proposed project option. The construction activities, equipment, phasing, and durations for Variant 4 would be the same as for both proposed project options. Therefore, the physical environmental effects and conclusions related to construction and operation of the of this variant would substantially be the same as those identified for both the Developer's Proposed Option and the Additional Housing Option for the following: land use and land use planning, population and housing, cultural resources, GHG emissions, wind and shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and hazards and hazardous materials. All mitigation measures identified for these topics under both proposed project options would be applicable to Variant 4.

Transportation and Circulation

Demolition, excavation, site grading, and construction activities under Variant 4 would be conducted according to the same construction phases as under the Developer's Proposed Option. As discussed under Impact TR-1 for the Developer's Proposed Option, this variant would use the same construction truck traffic routes (e.g., I-280 and Ocean Avenue and Frida Kahlo Way to access the project site). The phased and less-than-significant impacts associated with construction-related traffic of the Developer's Proposed Option are described under Impact TR-1. Impact TR-1's analysis would be applicable to this variant because the amount of construction truck traffic specific to the implementation of this variant would result in the same ***less than significant*** conclusion.

Variant 4 would not result in substantial increases in operational VMT because it would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space) and would not alter the development scenario for the Developer's Proposed Option. Therefore, Variant 4 would have a ***less-than-significant*** impact on VMT.

Under Variant 4, east–west vehicle, bicycle, and pedestrian access to the site from Frida Kahlo Way would be provided by the North Street Extension. The traffic signal would be relocated from the current North Access Road and Frida Kahlo Way intersection to the new North Street Extension/Frida Kahlo Way/Cloud Circle (North) intersection. The North Street Extension would provide a direct connection between the project site and Cloud Circle and City College campus. The relocation would provide an opportunity to lengthen the northbound left-turn pocket on Frida Kahlo Way, which is currently limited by the KEEP CLEAR markings at the Frida Kahlo Way and Cloud Circle (N) intersection. Based on observations conducted during the weekday a.m. peak period at the North Access Road and Frida Kahlo Way intersection, the northbound left-turn pocket was seen to regularly exceed capacity with vehicles waiting multiple cycles to turn left into the east basin surface parking lot, and occasionally spilling back and blocking the adjacent northbound travel lane on Frida Kahlo Way. Given the conceptual site plan, the variant's proposed intersection relocation would be subject to undergo more detailed design review and the proposed intersection geometry (i.e., northbound left-turn pocket length) and signal timing should be designed to accommodate the expected vehicle queue without spilling back into the adjacent travel lane on Frida Kahlo Way.

Overall, these site access and circulation changes would not change transit, pedestrian, bicycle, commercial or passenger loading, or emergency access effects from Variant 4. Operational-related project-level and cumulative transportation and circulation impacts under Variant 4 would be substantially the same as those discussed for the Developer's Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Thus, all operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 4 (i.e., Mitigation Measure M-C-TR-4, p. 3.B-96). Existing plus project and cumulative loading impacts along Lee Avenue between the project site and Ocean Avenue would be ***significant and unavoidable***. Impacts associated with cumulative transit delay would be ***significant and unavoidable with mitigation***.

The proposed modifications to the parking program under this variant (i.e., relocation of approximately 110 spaces at City College's surface parking lot) would not result in any changes to the number/type of parking spaces provided. Additional on-street parking will be provided on one or both sides of the North Street extension.

Based on the above, project-level and cumulative transportation and circulation impacts under Variant 4 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.B, Transportation and Circulation). Implementation of Variant 4 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

Noise and Vibration

Demolition, excavation, site grading, and construction activities under Variant 4 would be conducted according to the same construction phases as under the Developer's Proposed Option and would have the same significant impacts as identified in Impact NO-1 as discussed for the Developer's Proposed Option.

Because there would still be a significant construction noise impact under this variant, Mitigation Measure M-NO-1, p. 3.C-30, would apply to Variant 4. Implementation of construction-related noise control measures in Mitigation Measure M-NO-1 would reduce the temporary or periodic increases in ambient noise levels to the extent feasible. Similar to the Developer's Proposed Option, given that there would still be periods of peak construction activity exceeding the "Ambient + 10 dBA" standard at the nearest sensitive receptor locations for occasional periods when activity would be conducted at the property lines nearest to receptors, these occurrences would occur in all three phases of construction over an extended period of up to six years. Construction noise impacts to noise-sensitive receptors would be ***significant and unavoidable with mitigation***.

Variant 4 would not result in substantial increases in operational noise because it would have the same mix of land use types (i.e., residential, retail, childcare facility, community space, open space), same trip generation, and fixed mechanical equipment and a would not result in new or different operational noise sources than those analyzed under the Developer's Proposed Option. Therefore, Mitigation Measure M-NO-3, p. 3.C-36, would apply to Variant 4. Both project-level and cumulative impacts associated with fixed mechanical noise equipment would be ***less than significant with mitigation***. This variant would, however, construct a new street extension approximately 200 feet south of Archbishop Riordan High School and 400 feet north of the City College Multi-Use Building. These distances and the limited traffic volumes that would potentially use this roadway extension would be sufficient that these school uses would still be within the normally acceptable land use category for classroom uses (up to 65 Ldn).

Based on the above, project-level and cumulative transportation and circulation impacts under Variant 4 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.C, Noise). Implementation of Variant 4 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

Air Quality

Demolition, excavation, site grading, and construction activities under Variant 4 would be conducted according to the same construction phases as under the Developer's Proposed Option and would have the same impacts as identified in Impacts AQ-1 through AQ-6 and C-AQ-1 through C-AQ-2 as discussed for the Developer's Proposed Option. As discussed under Impact AQ-2a, p. 3.D-44, construction-related emissions for the Developer's Proposed Option would not exceed any significance thresholds. Therefore, this would be a less-than-significant impact. However, as discussed above, the project may be constructed over a shorter timeframe, resulting in full project construction over three years instead of six years. If this were to occur, the same amount of construction equipment and hours of operation would be required, but the activity would be compressed into a shorter duration. Therefore, average daily construction emissions would increase. Under this compressed schedule, and as discussed under Impact AQ-2a pp. 3.D-44, construction-related emissions of NOx for the Developer's Proposed Option would exceed significance thresholds in 2022. Therefore, this would be a significant impact. In addition, as discussed under Impact AQ-2b, p. 3.D-56, overlapping construction and operational emissions for the Developer's Proposed Option would exceed significance thresholds for NOx in 2024. Therefore, this would be a significant impact. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 4 (i.e., Mitigation Measures M-AQ-2a, p. 3.D-48; M-AQ-2b, p. 3.D-49; M-AQ-2c, p. 3.D-52; and M-AQ-2d, p. 3.D-53). Similar to the proposed project, Impact AQ-2a would be ***significant and unavoidable with mitigation***, while Impact AQ-2b would be ***less than significant with mitigation***.

With regard to exposure of sensitive receptors to substantial pollutant concentrations associated with project-related TAC emissions, construction-related TAC emissions would be the same as under the Developer's Proposed Option. Operational TAC emissions and exposure would be identical to the Developer's Proposed Option. As discussed under Impact AQ-4, p. 3.D-65, for receptors currently located in the APEZ, the excess cancer risk impact on offsite receptors under the Developer's Proposed Option would be significant and unavoidable with mitigation. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Variant 4 (i.e., Mitigation Measure M-AQ-2a, p. 3.D-48;

Mitigation Measure M-AQ-4a, p. 3.D-71; and Mitigation Measure M-AQ-4b, p. 3.D-72). Similar to the proposed project, this impact would be ***significant and unavoidable with mitigation***.

Variant 4 would not result in substantial increases in operational criteria pollutant or TAC emissions because it would have the same mix of land use types (i.e., residential, retail, community facilities/child care, open space), same trip generation and a would not result in new or different operational emissions sources than those analyzed under the Developer's Proposed Option.

Based on the above, project-level and cumulative air quality impacts under Variant 4 would be similar to those identified under the Developer's Proposed Option (see SEIR Section 3.D, Air Quality). Implementation of the Variant 4 would not result in new or more severe impacts, would not change the analysis or conclusions in that section, and no new mitigation measures would be required.

CHAPTER 6
Alternatives

6.A Introduction

This chapter presents the alternatives analysis as required by the California Environmental Quality Act (CEQA) for the proposed Balboa Reservoir Project (proposed project). The discussion includes a review of the alternatives analyzed in the Balboa Park Station Area Plan Final Environmental Impact Report (PEIR), followed by the methodology used to select alternatives to the proposed project for detailed CEQA analysis, with the intent of developing potentially feasible alternatives that could avoid or substantially lessen the significant impacts identified for the proposed project while still meeting most of the project objectives. This chapter identifies a reasonable range of alternatives that meet these criteria, and these alternatives are evaluated for their comparative merits with respect to minimizing adverse environmental effects. For the alternatives selected for detailed analysis, this chapter evaluates the alternatives' impacts against existing environmental conditions and compares the potential impacts of the alternatives with those of the proposed project options. Based on this analysis, this chapter then identifies the environmentally superior alternative. Finally, other alternative concepts that were considered but eliminated from detailed consideration are described along with the reasons for their elimination.

6.A.1 Organization of This Chapter

This chapter is divided into five main sections.

- Section 6.A, Introduction, p. 6-1, is this introductory section, which includes a summary of state requirements for the analysis of alternatives.
- Section 6.B, Descriptions of Alternatives Selected for Analysis, p. 6-7, describes the basis for selecting the alternatives analyzed in this SEIR; it reviews the project objectives, summarizes the significant impacts of the project that were identified in SEIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and describes the alternatives screening and selection process.
- Section 6.C, Alternatives Analysis, p. 6-11, provides a detailed description of each of the selected alternatives; presents the detailed alternatives analysis and evaluates the environmental impacts of each of the alternatives, compared to those of the proposed project and relative to each other; and summarizes their ability to meet the project objectives.
- Section 6.D, Environmentally Superior Alternative, p. 6-49, identifies the environmentally superior alternative.
- The last section, Section 6.E, Alternatives Considered but Rejected, p. 6-56, discusses alternative concepts considered but rejected from further study.

6.A.2 CEQA Requirements for Alternatives Analysis

CEQA Guidelines section 15126.6(a) states that an environmental impact report (EIR) must describe and evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project's basic objectives, but that would 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. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

CEQA, the CEQA Guidelines, and the case law on the subject have found that feasibility can be based on a range of factors and influences. CEQA Guidelines section 15364 defines "feasibility" 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." CEQA Guidelines section 15126.6(f)(1) states that the factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (if the site is not already owned by the proponent).

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 criteria for selecting and evaluating alternatives:

- "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible." (CEQA Guidelines section 15126.6(a))

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (CEQA Guidelines 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 could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines section 15126.6(c))

- "The specific alternative of 'no project' shall also be evaluated along with its impact." (CEQA Guidelines 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 need 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 to foster meaningful public participation and informed decision-making." (CEQA Guidelines section 15126.6(f))

6.A.3 Alternatives Selection

This section describes the basis for determining the range of CEQA alternatives and identifies the specific alternatives that are analyzed in this EIR.

Project Objectives

As presented in SEIR Chapter 2, Project Description, the City and County of San Francisco and the SFPUC, as the current owner of the project site, and Reservoir Community Partners LLC, the project sponsor, identified nine shared objectives associated with the Balboa Reservoir project, and one additional objective for the City and SFPUC. The project objectives are used in the identification, selection, and evaluation of alternatives. As noted above, an EIR need only consider alternatives that would feasibly accomplish most of the project's basic objectives.

Summary of Significant Impacts

As stated in the CEQA Guidelines section 15126.6(a), alternatives to a project selected for analysis in an EIR must substantially lessen or avoid any of the significant environmental impacts associated with the project. The following summarizes the conclusions for potentially significant and significant impacts identified in SEIR Chapter 3 and Appendix B, Initial Study.

Significant and Unavoidable Impacts

The proposed project was determined to have the following significant and unavoidable impacts, even with implementation of feasible mitigation measures, as described in detail in SEIR Chapter 3.

Transportation and Circulation

- The proposed project's physical changes to Lee Avenue could result in secondary effects if there is a resulting deficit in freight loading supply serving Whole Foods and other nearby uses. These secondary effects could impact existing de facto passenger and freight loading zones, and may create potentially hazardous conditions for people bicycling or significant delay public transit. No feasible mitigation measures were identified and this impact is considered significant and unavoidable. (Impact TR-6b)
- The proposed project, in combination with reasonably foreseeable future development, would increase vehicle traffic and transit ridership. Given the uncertainty regarding growth associated with implementation of City College facilities master plan projects, this impact is conservatively considered a significant cumulative impact and the project's contribution to this impact would be cumulatively considerable. Mitigation would require the project sponsor to monitor transit travel times and implement measures to meet the transit travel time performance standard; however, given the uncertainty regarding the effectiveness of TDM measures and if SFMTA would approve other measures under their jurisdiction, even with implementation of Mitigation Measure M-C-TR-4, this impact is conservatively considered to remain significant and unavoidable with mitigation. (Impact C-TR-4)

- The proposed project, in combination with reasonably foreseeable future projects, would result in a reduction in on-street loading supply on Lee Avenue, such that the loading demand along Lee Avenue would not be accommodated within the on-street loading supply, would impact existing passenger and freight loading zones, and may create potentially hazardous conditions for people bicycling or substantially delay public transit. The project's contribution to this impact would be cumulatively considerable. No feasible mitigation measures were identified and this impact is considered significant and unavoidable. (Impact C-TR-6b)

Noise

- Project construction would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors above levels existing without the project. Mitigation including construction noise control measures would lessen the severity of the impact, but not to a less-than-significant level. This impact is significant and unavoidable with mitigation. (Impact NO-1)
- Construction of the proposed project, in combination with construction of other cumulative development, would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors, due to overlapping construction activities in proximity to receptors, resulting in a significant cumulative impact. The project's contribution to this impact would be cumulatively considerable without mitigation. Mitigation to implement construction noise control measures would lessen the severity of the impact, but not to a less-than-significant level. (Impact C-NO-1)

Air Quality

- During project construction (including during construction of Phase 2 that overlaps with Phase 1 project operations), the proposed project would not generate criteria air pollutants at levels that would violate air quality standards for reactive organic gases (ROG) and nitrogen oxides (NOx), contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. However, due to the unknowns associated with construction phasing depending on market conditions and other unanticipated factors which could result in increases in criteria pollutant emissions, ROG and NOx emissions are conservatively assumed to exceed the significance thresholds during the construction period (ROG and NOx emissions during construction of Phase 2 that overlaps with Phase 1 project operations would not exceed the significance thresholds). Mitigation measures would substantially lessen the severity of the impact; however, due to the unknowns associated with implementing an emission offset program and construction phasing depending on market conditions and other unanticipated factors, this impact is conservatively considered significant and unavoidable with mitigation. (Impact AQ-2a)
- During project construction (including during construction of Phase 2 that overlaps with Phase 1 project operations), the proposed project would generate toxic air contaminants (TACs) at levels that would expose either offsite or onsite sensitive receptors to substantial pollutant concentrations. The health risk assessment conducted for the proposed project determined that impacts associated with excess cancer risk at both offsite and onsite receptors would exceed significance thresholds without mitigation. Mitigation measures would reduce the impact on offsite and onsite sensitive receptors. However, due to the unknowns associated with construction phasing depending on market conditions and other unanticipated factors which could result in increases in exposure and health risks, health risks at offsite receptor locations are conservatively assumed to still exceed the significance thresholds, and impacts would therefore be considered significant and unavoidable with mitigation. (Impact AQ-4)

- The proposed project, in combination with reasonably foreseeable future development in the project area, would contribute to cumulative regional air quality impacts and cumulative health risk impacts on sensitive receptors. Mitigation measures would lessen the severity of the impact; however, due to the unknowns associated with implementing an emission offset program and the unknowns associated with construction phasing depending on market conditions and other unanticipated factors which could result in increased exposure and health risks, this impact is conservatively considered significant and unavoidable with mitigation. (Impact C-AQ-1 and Impact C-AQ-2)

Alternatives Screening and Selection

Alternatives Screening

The alternatives selection process for the proposed project was focused on identifying strategies that address the significant and unavoidable impacts of the proposed project. In addition, potential alternatives were identified from review of scoping comments received following issuance of the Notice of Preparation. The alternative strategies were then reviewed for their feasibility, and the potentially feasible strategies were then screened for their ability to meet most of the project objectives. This process resulted in the development of the project alternatives that were determined to represent a reasonable range of alternatives as described and analyzed in this SEIR.

Strategies to Avoid or Lessen Significant Impacts

The significant and unavoidable impacts identified for the proposed project options can be broken down into the following categories with respect to strategies to avoiding or lessening impacts related to:

- Secondary operational loading impacts
- Transit delay
- Noise and air quality effects of construction activities

These strategies were then used to formulate alternatives for analysis in this chapter.

Alternative Strategy to Address Secondary Loading Impacts

The significant and unavoidable transportation impact relates to the extension of Lee Avenue into the project site, and reconfiguration of Lee Avenue between Ocean Avenue and the project site. As described in SEIR Section 3.B, Transportation and Circulation, the proposed project would alter the current status of Lee Avenue as a dead-end street and de facto loading zone for deliveries to the Whole Foods grocery store at 1150 Ocean Avenue and to other nearby retail stores and restaurants. That is, because Lee Avenue between Ocean Avenue and the project site has little traffic other than cars heading to the Whole Foods garage and delivery trucks, trucks often park at the curb along Lee Avenue (despite the presence of “No Parking” signs on both sides of the street) to make deliveries. The curb is also used for passenger pickups and drop-offs. The reconfiguration of Lee Avenue as part of the project to a through street providing access to and from the project site would therefore effectively reduce the supply of on-street loading available to Whole Foods and nearby land uses.

If Whole Foods loading operations were to continue to occur on Lee Avenue, a loading deficit could exist, which could result in secondary effects on people bicycling and public transit delay. Examples include vehicles double parking for loading activities in Lee Avenue's travel lanes, which could create potentially hazardous conditions for people bicycling in those travel lanes, and queues causing drivers to shift lanes along Ocean Avenue and cause delays to the K-Ingleside. Whole Foods could internalize and manage some or all their loading demand, but there are no observations or data to demonstrate that Whole Foods would be able to fully do so.

As noted in Chapter 2, Project Description, the proposed project includes the conversion of five metered parking spaces (totaling 105 feet in length) along the Ocean Avenue frontage of 1150 Ocean Avenue to metered loading spaces between the hours of 6 a.m. and 2 p.m., subject to SFMTA approval. However, this new proposed on-street space may not be convenient for all deliveries and the potentially secondary impacts may still occur.

Strategies to reduce these operational secondary impacts include providing an additional point of access to the project site, which would reduce the number of project-generated vehicle trips at the Ocean Avenue/Lee Avenue intersection. Reducing the associated number of project-generated vehicle trips on Lee Avenue would reduce, to some extent, the potential for hazardous conditions to people bicycling and queueing that could occur at the intersection of Ocean and Lee avenues, which in turn could affect the K Ingleside. However, it is not known and cannot be known at this time how activity on Lee Avenue will occur in the future once the street is changed from a dead-end to a through street. Moreover, on-street loading demand from Whole Foods and other nearby existing uses, would be displaced regardless of the size of the project. Therefore, for purposes of a conservative assessment, it is judged that this change resulting from the project, along with the addition of project traffic, even if in a lesser volume, the project could cause potentially hazardous conditions to people bicycling and delay transit.

Alternative Strategy to Address Transit Delay

The addition of vehicle and transit trips generated by the proposed project in combination with the City College facilities master plan projects and other cumulative development is expected to increase transit delay and could exceed the four-minute threshold. As a result, the proposed project options, in combination with cumulative projects, could result in a significant cumulative public transit delay impact given the uncertainty of City College's contribution. The proposed project's contribution would be cumulative considerable at greater than two minutes of delay

As discussed under Impact C-TR-4, p. 3.B-94, given the uncertainty regarding the effectiveness of TDM measures and if SFMTA would approve other measures under their jurisdiction, even with implementation of Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay, p. 3.B-96, the proposed project options and variants would result in a significant and unavoidable with mitigation cumulative impact with respect to transit delay.

Strategies to reduce these operational impacts include providing an additional point of vehicular access to the project site and reducing the density of the project. Providing an additional vehicular access point would reduce the number of project-generated vehicle trips along transit routes.

Reducing the associated number of project-generated vehicle trips along Ocean Avenue and Frida Kahlo Way would reduce, to some extent, the potential for the project to have a considerable contribution to increases in transit delay. Reducing the density of the project would reduce the number of project-generated vehicle and transit trips. Reducing the number of project-generated vehicle and transit trips would reduce, to some extent, the potential for the project to have a considerable contribution to increases in transit delay. However, given the uncertainty in City College facilities master plan projects contribution, there could be a cumulative impact to transit delay to which the project could have a cumulatively considerable contribution.

Alternative Strategy to Address Construction-Related Impacts

Construction activities would result in significant and unavoidable impacts related to air quality and noise. SEIR Section 3.D, Air Quality, identifies mitigation measures for construction air quality and TACs, which include construction emissions minimization and an emission offsets program. These measures represent feasible strategies to lessen air quality impacts of the proposed project, although not to a less-than-significant level under the compressed construction schedule. An alternative strategy to avoid this impact would be to require that the construction be phased sequentially over a six-year period, with no compressed schedule.

SEIR Section 3.C, Noise, identifies mitigation to reduce construction-related noise impacts, which include construction noise control measures, although significant effects would still result. The construction-related impacts are associated with the scale and duration of the development. For both air quality and noise impacts, one potential alternative strategy to avoid or lessen construction impacts would be to reduce the scale of the project, which in turn could reduce the magnitude of construction.

6.B Descriptions of Alternatives Selected for Analysis

Based on the screening process described above, the following four alternatives were selected for detailed analysis in this SEIR:

- Alternative A: No Project Alternative
- Alternative B: Reduced Density Alternative
- Alternative C: San Ramon Way Passenger Vehicle Access Alternative
- Alternative D: Six-Year Construction Schedule Alternative

These four alternatives were determined to adequately represent the range of potentially feasible alternatives required under CEQA for this project. These alternatives would lessen, and in some cases avoid, significant and unavoidable adverse impacts related to air quality and transportation that were identified for the proposed project. A "no project alternative" is included as Alternative A, as required by CEQA, even though it would not meet the basic project objectives.

Alternatives B, C, and D are potentially feasible options that would meet most of the basic project objectives. Other alternatives considered, but not carried forward for detailed analysis and the reasons they were not carried forward, are described in Section 6.E, p. 6-56.

Table 6-1, Characteristics of Proposed Project and Alternatives, summarizes and compares the characteristics of the proposed project with those of Alternatives A through D. For comparison purposes, **Figures 6-1 through 6-3**, presented in Section 6.C, pp. 6-15, 6-17, and 6-30, respectively, depict Alternatives B and C. Alternative D would require applying sequential construction phasing over six years without a compressed schedule. **Table 6-2, Summary of Ability of Alternatives to Meet Project Objectives**, summarizes the ability of each of the alternatives to meet the project objectives.

Detailed descriptions of each alternative are presented below, including the assumptions used in analyzing their environmental impacts. For each alternative, the descriptions include the land use plan, description of features different from the proposed project options, and construction assumptions.

TABLE 6-1
CHARACTERISTICS OF PROPOSED PROJECT AND ALTERNATIVES

	Proposed Project		Alternatives			
Characteristic	**Developer's Proposed Option**	**Additional Housing Option**	**Alternative A: No Project**	**Alternative B: Reduced Density**	**Alternative C: San Ramon Way Passenger Vehicle Access**[a]	**Alternative D: Six-Year Construction Schedule**[b]
Land Use Program						
Residential, dwelling units	1,100	1,550	0	800	1,100–1,550	1,100–1,550
Residential, gross square feet	1,283,000	1,588,000	0	936,590[c]	1,283,000–1,588,000	1,283,000–1,588,000
Commercial (retail), gross square feet	7,500	7,500	0	7,500	7,500	7,500
Community Facilities, gross square feet	10,000	10,000	0	10,000	10,000	10,000
Parking, gross square feet	339,900	231,000		143,930[d]	231,000–339,900	231,000–339,900
Total Building Area	**1,640,400**	**1,836,500**	**0**	**1,098,020**	**1,640,400–1,836,500**	**1,640,400–1,836,500**
Parking						
Parking, no. of spaces	1,300 [550 residential + 750 public garage]	650 [residential only]	1,007	400 [residential only][d]	650–1,300	650–1,300
Open Space						
Open Space, acres	4.2	4.2	0	4.2	4.2	4.2

Characteristic	Proposed Project: Developer's Proposed Option	Proposed Project: Additional Housing Option	Alternatives: Alternative A: No Project	Alternatives: Alternative B: Reduced Density	Alternatives: Alternative C: San Ramon Way Passenger Vehicle Access[a]	Alternatives: Alternative D: Six-Year Construction Schedule[b]
Building Characteristics						
Stories, no.	2 to 7	2 to 8	—	2 to 6	2 to 8	2 to 8
Height, feet	28 to 78	28 to 88	—	28 to 68	28 to 88	28 to 88
Construction						
Start Date	2021	2021	—	2021	2021	2021
End Date	2024 or 2027	2024 or 2027	—	2027	2027	2027
Total Duration, years	3–6	3–6	—	6	6	6
Construction phases	3	3	—	3	3	3

SOURCES: ESA, 2019; Van Meter Williams Pollack, 2019.

[a] The San Ramon Way Access Alternative could be implemented in conjunction with either the Developer's Proposed Option or the Additional Housing Option. Hence, development intensity is given as a range between that of the two options.

[b] Alternative D could be combined with the proposed project options.

[c] 800 units is approximately 73 percent of the Developer's Proposed Option. Alternative B residential gross square footage is estimated based on the percentage of the Developer's Proposed Option.

[d] Similar to the Additional Housing Option, Alternative B would not provide a public parking garage. The residential parking for Alternative B was calculated based on the same ratio as the Additional Housing Option (231,000 gsf / 650 spaces = 355.4 gsf/space x 400 Alternative B spaces = 142,160 gsf).

TABLE 6-2
SUMMARY OF ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Project Objectives	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
	Would the alternative meet this objective?			
Implement the goals of the City's 2014 Public Land for Housing program and the Surplus Public Lands Initiative (Proposition K), passed by the voters in November 2015, by replacing an underused surface parking lot located on surplus public land with a substantial amount of new housing, including a high percentage of affordable housing.	No	Partially due to reduction in residential units (provides 300 and 750 less units than the Developer's Proposed Option and Additional Housing Option, respectively)	Yes	Yes
Implement the objectives and goals of the General Plan Housing Element and of the 2009 Balboa Park Station Area Plan that calls for the development of a mixed-use residential neighborhood on the west reservoir to address the citywide demand for housing.	No	Yes	Yes	Yes

Project Objectives	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
	Would the alternative meet this objective?			
Contribute to the City's goal of creating 5,000 housing units each year on a site specifically identified in the general plan for additional housing in close proximity to local and regional public transportation by maximizing the number of housing units in the project.	No	Partially due to reduction in residential units	Yes	Yes
Build a high-quality residential community with a wide range of building types and heights, and a range of dwelling unit type and tenure, which will provide new residents with the greatest variety of housing options.	No	Partially due to reduction in residential units	Yes	Yes
Build a mixed-income community with a high percentage of affordable units to provide housing options for households at a range of income levels, and by doing so facilitate a neighborhood that fosters personal connections across income ranges.	No	Partially due to reduction in residential units	Yes	Yes
Replace the reservoir's abandoned infrastructure with new infrastructure improvements, including new streets and sidewalks, bicycle and pedestrian amenities, pedestrian paseos and multiuse paths, water, sewer and gas/electric utilities, new fire hydrant infrastructure and an extension of the City's Auxiliary Water Supply System (AWSS), and community facilities including one new public park, another major open space, a community center, and a childcare facility.	No	Yes	Yes	Yes
Establish pedestrian and bicycle connections from the Project site to adjacent neighborhoods including City College of San Francisco, Ocean Avenue, Sunnyside and Westwood Park, and increase and improve pedestrian access to transit connections in the area including Bay Area Rapid Transit (BART), Municipal Railway (Muni) light-rail and bus lines, and Muni's City College Terminal.	No	Yes	Yes	Yes
As stated in the City's Balboa Reservoir Request for Proposals, work with City College to address parking needs by identifying parking and transportation solutions.	No	Yes	Yes	Yes

Project Objectives	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
	Would the alternative meet this objective?			
Develop a project that is financially feasible and able to support the financial investment that will be required to realize it, including equity and debt return levels that will be required by investors and lenders to finance residential developments, as well as eligibility for required federal, state, regional, and local sources of subsidy for infrastructure and utility construction and affordable housing.	No	Financial feasibility unknown	Yes	Yes
The City and SFPUC have the following additional objective: • Provide SFPUC's water utility ratepayers with fair market value for this utility land asset as required by the City's Charter and applicable law.	No	Unknown	Yes	Yes

6.C Alternatives Analysis

This section presents the detailed analysis of the impacts of the selected alternatives compared to the proposed project. For each of the three alternatives, this section presents a description of the alternative, assesses the ability of the alternative to meet each of the project objectives, and analyzes the impacts of the alternative compared to those of the proposed project. The impact analysis is based on the same environmental setting and significance criteria as presented for each resource topic in SEIR Chapter 3 and uses the same approach to analysis. Except as noted, the impact analysis of the alternatives is qualitative, relative to the identified impacts of the project, and the reader is referred to Chapter 3 and the initial study for the more detailed analysis.

Alternative A: No Project

As required by CEQA Guidelines section 15126.6(e), a no project alternative is evaluated in this SEIR to allow decision-makers to compare the environmental effects of approving the proposed project with the effects of not approving the project. CEQA Guidelines section 15126.6(e)(2) requires that the no project alternative analysis "discuss the existing conditions … as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and policies and consistent with the available infrastructure and community services." The no project alternative would not preclude development of the site by another project in the future. Currently, there are no other development proposals pending at the project site. Therefore, pursuant to CEQA Guidelines section 15126.6(e)(3)(B), the no project alternative for purposes of this analysis is considered "no build" wherein the existing environmental setting is maintained and is "the circumstance in which the project does not proceed."

Description of the No Project Alternative

Under Alternative A, the Balboa Reservoir site would not be developed with either of the proposed project options described in SEIR Chapter 2, or the variants described in SEIR Chapter 5, Variants. Under Alternative A, there would be no change to the existing site circulation. The surface parking lot would not be altered, and the existing 1,007 surface vehicular parking spaces would remain. The project site would be accessed from the North Access Road as under existing conditions. In addition, the Lee Avenue extension, new infrastructure, and streetscape and open space improvements would not be constructed.

The existing development controls on the project site would continue to govern site development and would not be changed. There would be no amendments to the general plan, planning code, or zoning map. No changes related to a new Balboa Reservoir Special Use District or design standards and guidelines would occur. The project site would remain under the existing P (Public) Use District and the 40-X and 65-A Height and Bulk Districts. Any specific detail about the characteristics of future development under the No Project Alternative would be speculative.

Impacts of the No Project Alternative

This environmental analysis assumes that the existing use on the project site would not change and that the existing physical conditions described in SEIR Chapter 3 and in SEIR Appendix B, Initial Study, Section E, Evaluation of Environmental Effects, would remain the same. If Alternative A were to proceed, no changes would be implemented, and none of the impacts associated with the proposed project options or variants, as described in SEIR Chapter 3, SEIR Chapter 5, and initial study Section E, would occur. However, incremental changes would be expected to occur in the vicinity of the project site as nearby reasonably foreseeable cumulative projects (see Table 3.A-1, Cumulative Projects in the Project Vicinity, p. 3.A-11) are approved, constructed, and occupied. With no change to existing site conditions under Alternative A, land use activity on the project site would not contribute to significant cumulative impacts beyond existing levels.

Transportation and Circulation

Travel Demand and Transportation Network Changes

With existing land uses retained and no changes to the transportation network, transportation and circulation conditions would remain as they are under existing conditions.

Construction Impacts

Alternative A would not generate construction-related truck traffic or worker trips to and from the project site. Therefore, this alternative would not have any construction-related impacts under existing plus project and cumulative conditions.

Operational Impacts

Alternative A would not result in any increases in operations-related travel to and from the project site over existing conditions, and therefore would have less-than-significant project-specific impacts on vehicle miles traveled, traffic hazards, transit, pedestrian or bicycle travel, loading within the site, and emergency vehicle access. The significant loading impact (Impact TR-6b, p. 3.B-85) that would be attributable to the proposed project options and variants would not occur for Alternative A.

Cumulative Impacts

Alternative A would not contribute to any cumulative impacts on vehicle miles traveled, traffic hazards, pedestrian or bicycle travel, emergency vehicle access, or project-specific construction as none were identified. The significant cumulative transit impact (Impact C-TR-4, p. 3.B-94), and the significant cumulative loading impact (Impact C-TR-6b, p. 3.B-101) that would be attributable to the proposed project options and variants would not occur for Alternative A. Therefore, the mitigation measure identified for the proposed project options and variants (Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay, p. 3.B-96) would not be applicable.

Noise

Under Alternative A, the project site would continue to be used as an overflow parking lot and site conditions would not change. The significant construction-related noise increases (Impact NO-1), and significant operational noise increases from stationary equipment (Impact NO-3) that would be attributable to the proposed project options or project variants would not occur. The mitigation measures identified for the proposed project and project variants (Mitigation Measures M-NO-1, Construction Noise Control Measures, p. 3.C-30; and M-NO-3, Fixed Mechanical Equipment Noise Controls, p. 3.C-36) would not be applicable, as no new construction would occur. Compared to the proposed project options, Alternative A would not have any project-level noise and vibration impacts, and would not contribute to any cumulative impacts related to noise and vibration.

Air Quality

Under Alternative A, the project site would continue to be used as an overflow parking lot and site conditions would not change. The significant construction-related criteria pollutant increases (Impact AQ-2a, p. 3.D-44), the significant health risk impact (Impact AQ-4, p. 3.D-65), the significant cumulative regional air quality impacts (Impact C-AQ-1, p. 3.D-88), and the significant cumulative regional health risk impacts (Impact C-AQ-2, p. 3.D-91) that would be attributable to the proposed project options and variants would not occur for Alternative A. The mitigation measures identified for the proposed project and variants (Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-2b, Low-VOC Architectural Coatings, p. 3.D-49; M-AQ-2c, On-Road Truck Emissions Minimization for the Compressed Construction Schedule, p. 3.D-52; M-AQ-2d, Offset Construction and Operational Emissions for the Compressed Schedule, p. 3.D-53; M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-71; and Mitigation Measure M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72) would not be applicable, as no new construction or operational activities would occur. Compared to the proposed project, Alternative A would not have any project-level air quality or health risk impacts, and would not contribute to any cumulative impacts related to air quality or health risk.

Initial Study Topics

The initial study (Appendix B) and Chapter 5, Variants, of this SEIR concluded that the proposed project options and variants would have no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation in the following analysis areas: land use and land use planning, aesthetics, population and housing, cultural resources, tribal cultural resources, greenhouse gas emissions, wind, shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards/hazardous materials, mineral resources, energy, agriculture and forestry resources, and wildfire.

Alternative A would result in no impacts related to any of these environmental topics, because this alternative would result in no changes to existing site conditions. Because there would be no ground disturbance or new construction at the site under Alternative A, mitigation measures presented in the initial study would not be required under Alternative A.

Ability of the No Project Alternative to Meet Project Objectives

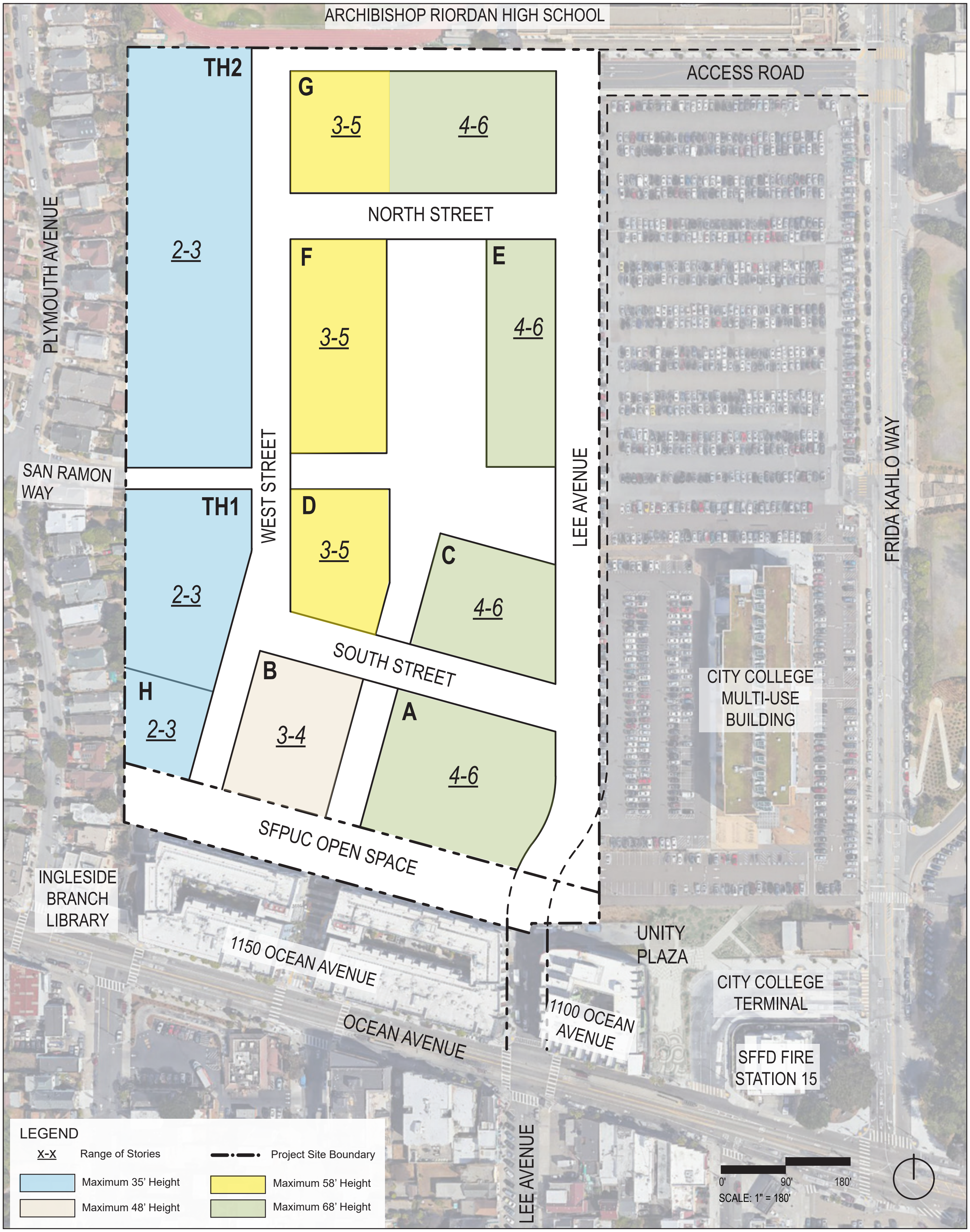
It is assumed that other proposed residential community projects at the site would also not be built under the No Project Alternative, as the project options and other alternatives address differences in residential community density and layout. As shown in Table 6-2, p. 6-9, the No Project Alternative would not meet any of the project objectives. The project site would remain under the existing P (Public) Use District and the 40-X and 65-A Height and Bulk Districts, and no mixed-use residential community would be built at the project site. The reservoir's abandoned infrastructure would not be replaced with new infrastructure improvements. The No Project Alternative would not implement the goals of the City's 2014 Public Land for Housing program, the Surplus Public Lands Initiative, the General Plan Housing Element, or the 2009 Balboa Park Station Area Plan.

Conclusion

Under Alternative A, none of the impacts associated with the proposed project options, as described in Chapter 3 and in Appendix B, the initial study, would occur. The existing surface parking lot would be retained in its current condition; no new buildings, infrastructure, open space, or streetscape improvements would be constructed. There would be no change to existing site circulation. Alternative A would have no significant impacts related to air quality, or transportation and circulation. Therefore, the No Project Alternative would avoid the significant and unavoidable impacts for the proposed project.

Alternative B: Reduced Density Alternative

Alternative B is the Reduced Density Alternative, shown in **Figure 6-1, Alternative B: Reduced Density Alternative Site Plan and Height Ranges (800 Units)**. The purpose of this alternative is to avoid or substantially reduce the significant and unavoidable construction-related impacts on noise and air quality, loading impacts, and cumulative transit delay impacts identified in SEIR Chapter 3 for the proposed project options and summarized in Section 6.A.3, Alternatives Selection, p. 6-3.



SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 6-1
Alternative B: Reduced Density Alternative
Site Plan and Height Ranges (800 Units)

Description of the Reduced Density Alternative

Alternative B would be identical to the proposed project options with respect to the types of land uses, street configurations, and site plan block configurations. Under Alternative B, it is assumed that the site would be developed with approximately 936,590 gross square feet of residential uses (800 dwelling units, or 300 and 750 fewer than the Developer's Proposed Option and Additional Housing Option, respectively). This alternative would include 7,500 gross square feet of retail space and 10,000 gross square feet of childcare and community space, as under both proposed project options. Similar to the Additional Housing Option, Alternative B would not include a public parking garage. There would be approximately 143,930 gross square feet of parking (87,070 and 195,970 gross square feet less than the Additional Housing Option and Developer's Proposed Option, respectively), providing 400 residential parking spaces (150 and 250 fewer than the Additional Housing Option and Developer's Proposed Option, respectively). **Figure 6-2, Alternative B: Reduced Density Alternative Parking Facilities and Street Parking Plan**, illustrates the proposed off-street parking locations.

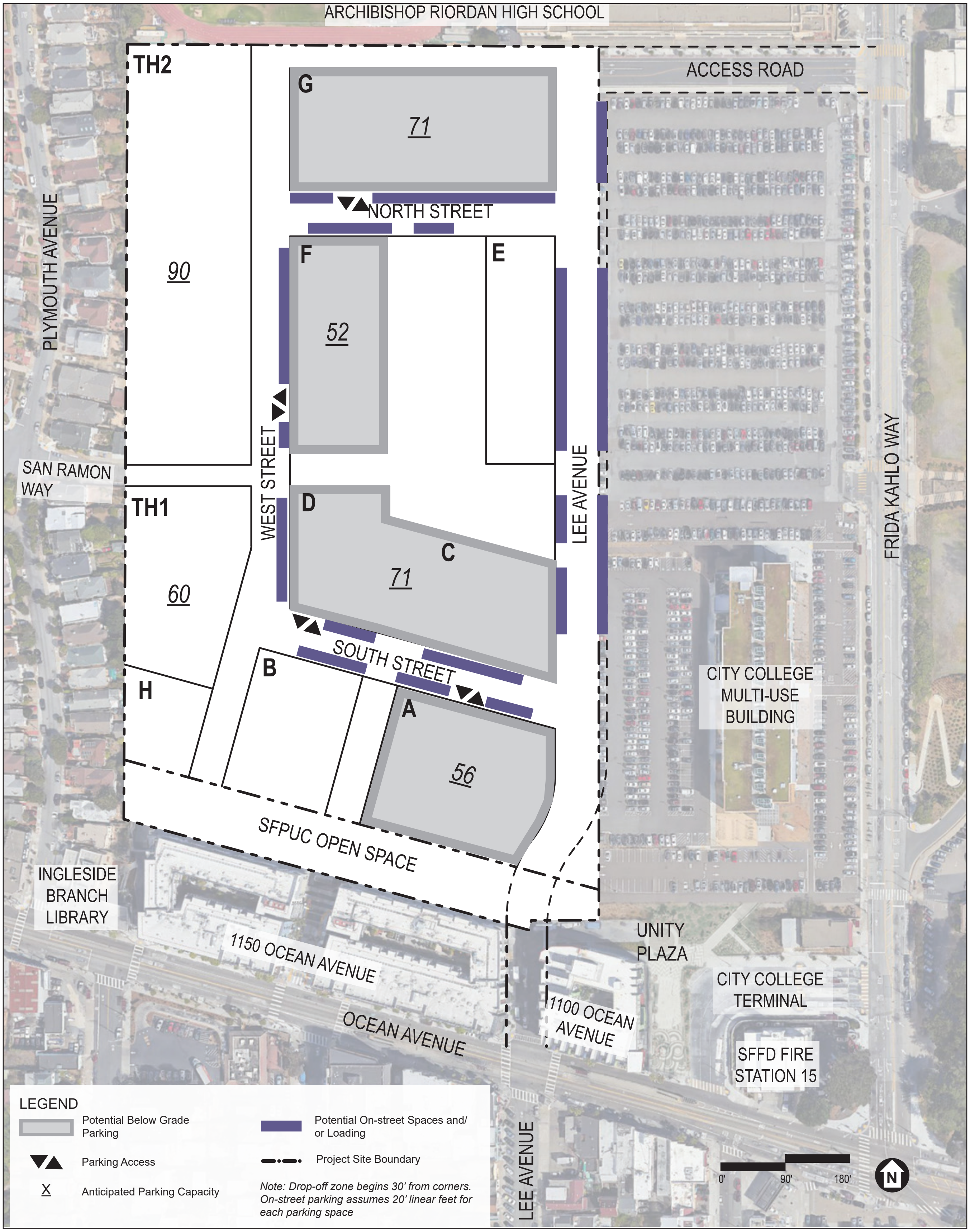
Overall, the total building area would be approximately 542,380 to 738,480 gross square feet less than the amount of development in the Developer's Proposed Option and the Additional Housing Option, respectively. The total building area would be about 66 percent of the Developer's Proposed Option and 59 percent of the Additional Housing Option.

In general, and as shown in Figure 6-1, building heights would be reduced compared to both proposed project options. Building heights on Blocks A through G would be reduced by one story compared to the Developer's Proposed Option and by two stories compared to the Additional Housing Option. Blocks TH1, TH2, and H would remain the same as under the Developer's proposed option, with building heights up to 35 feet. The building heights for Blocks A through G for Alternative B would range in height from 25 to 68 feet.

Similar to the proposed project options, this alternative would include approximately 4 acres of open space. The open spaces and parks would be connected by new internal networks such as pedestrian passages, sidewalks, and roadways. As with the proposed project options, the SFPUC would retain ownership of an 80-foot-wide strip of land located along the southern edge of the site where an underground water transmission pipeline is located.

The transportation and circulation improvements under Alternative B would be identical to those under the proposed project options, including the Lee Avenue extension, interior streets, streetscape improvements, bicycle facilities, and Ocean Avenue streetscape modifications.

Operations of the retail, childcare and community facilities space under Alternative B would be essentially the same as that for both proposed project options. The reduction in the number of residential units under Alternative B would also reduce the number of vehicle, pedestrian, and bicycle trips compared to the proposed project options.



SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 6-2
Alternative B: Reduced Density Alternative
Parking Facilities and Street Parking Plan

Construction

Construction of Alternative B would be similar to the proposed project options, though reduced in both magnitude and duration. In general, the same types of construction activities and equipment would be required. Similar to the proposed project options, it is anticipated that construction would start in 2021 and be completed in 2027. Similar to both proposed project options, the initial phase (Phase 0) for Alternative B would include demolition of the west side berm and north and east embankments, followed by grading, excavation, and construction of site infrastructure over 12 months from 2021 to 2022. Two phases of vertical construction would follow, each lasting approximately 24 to 30 months. The construction activities during Phases 1 and 2 would include, but not be limited to, finish grading, excavation for subgrade parking, construction of building foundations, building construction, architectural coatings, and paving. Construction of Phase 1 (400 units) would occur from 2022 to 2024. Construction of Phase 2 (400 units) would occur from 2024 to 2027, after Phase 1 is complete. Buildings constructed in Phase 1 would be occupied during construction of Phase 2. Like the proposed project, the phasing of project implementation would be subject to changes due to market conditions and other unanticipated factors. Therefore, construction could be accelerated and complete as early as 2023 or extend beyond 2027.

No public parking garage is proposed under Alternative B. Therefore, this alternative would not require 56,000 cubic yards of excavation export under the Developer's Proposed Option. However, similar to the Additional Housing Option, Alternative B would require a net import of 9,000 cubic yards of fill to balance the site.

Impacts of the Reduced Density Alternative

For the purposes of this alternatives analysis, it is assumed that Alternative B would incorporate the same design standards and guidelines, infrastructure improvements, and transportation management planning assumptions as those under the proposed project options. Impacts of Alternative B would be similar to or less than those of the proposed project with respect to nearly all resource areas. In all cases, the same mitigation measures identified for the proposed project options would apply to the Reduced Density Alternative. The impacts of the Reduced Density Alternative as compared to those of the proposed project are summarized below by resource topic.

Transportation and Circulation

Travel Demand and Transportation Network Changes

The transportation and circulation changes under Alternative B would be identical to those under the proposed project options, including the Lee Avenue extension, interior streets, streetscape improvements, and bicycle access ways. Alternative B would be identical to the proposed project options with respect to the type of land uses, street configurations, and site plan block configurations. However, under Alternative B, it is assumed that the site would be developed with 800 residential units and 400 vehicle parking spaces for residential use. As with the proposed project options, Alternative B would include 10,000 square feet of childcare space and 7,500 square feet of retail space.

The travel demand for Alternative B was estimated for weekday daily and weekday a.m. and p.m. peak periods assuming the same unit and bedroom mix as with the Developer's Proposed Option and Additional Housing Option. A comparison of the daily vehicle and person-trips of the proposed project options with Alternative B is provided in **Table 6-3, Daily Vehicle and Person-Trips of the Proposed Project Options and Alternative B**.

TABLE 6-3
DAILY VEHICLE AND PERSON-TRIPS OF THE PROPOSED PROJECT OPTIONS AND ALTERNATIVE B

	Vehicle Trips			Person-Trips		
	Daily	A.M. Peak Hour	P.M. Peak Hour	Daily	A.M. Peak Hour	P.M. Peak Hour
Alternative B	2,393	196	248	8,425	655	825
Developer's Proposed Option	3,168	249	318	10,985	828	1,052
Difference	-775 24% reduction	-53 21% reduction	-70 22% reduction	-2,560 23% reduction	-173 21% reduction	-227 22% reduction
Alternative B	2,393	196	248	8,425	655	825
Additional Housing Option	4,442	329	423	14,825	1,088	1,394
Difference	-2,049 46% reduction	-133 40% reduction	-175 41% reduction	-6,400 43% reduction	-433 40% reduction	-569 41% reduction

SOURCES: SF Guidelines, 2019. ITE, 10th Edition, 2017, Kittelson & Associates Inc., 2019.

Alternative B would generate 8,425 person trips and 2,393 vehicle trips on a daily basis, 655 person trips and 196 vehicle trips during the weekday a.m. peak hour, and 825 person trips and 248 vehicle trips during the weekday p.m. peak hour. Because of its reduced land use program compared to the proposed project and project variant, Alternative B would result in 24, 21, and 22 percent fewer vehicle trips as compared to the Developer's Proposed Option on a daily, weekday a.m. and p.m. peak hour basis, respectively. Additionally, because Alternative B would not include a public parking garage, existing vehicle traffic destined for the existing surface parking located in the west basin (project site) would not be redistributed. Alternative B would result in 46, 40, and 41 percent fewer vehicle trips as compared to the Additional Housing Option on a daily, weekday a.m. and p.m. peak hour basis, respectively.

Construction Impacts

Alternative B would be constructed in three phases over a three- or six-year period, similar to the proposed project options. Because of its reduced scale of the construction program compared to the proposed project options, Alternative B would result in fewer and less substantial construction effects. As with the proposed project options, Alternative B would also result in a ***less-than-significant*** construction-related transportation impact. PEIR Improvement Measure (Construction) is superseded by the requirements of the blue book regulations, which include the development of a construction management plan and review and approval by the SFMTA and public works to address overall coordination of construction activities, transportation-related circulation, access, and staging.

Operational Impacts

As a result of the reduced land use program and associated reduction in person and vehicle trips generated by Alternative B, Alternative B would result in reduced operational effects compared to those described for the proposed project options and therefore would have ***less-than-significant*** project-specific impacts on vehicle miles traveled, traffic hazards, transit, pedestrian or bicycle travel, loading within the site, and emergency vehicle access.

As with the proposed project, Alternative B would extend Lee Avenue into the project site, altering Lee Avenue's current status as a dead-end street and de facto loading area for passenger pickup and drop-off and freight deliveries. This reconfiguration of Lee Avenue would reduce the supply of on-street loading available to Whole Foods and nearby land uses. Like the project, this alternative would convert five metered parking spaces (105 linear feet) to commercial loading along Ocean Avenue between Lee Avenue and Brighton Avenue. Alternative B would reduce project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection compared to the proposed project options. Although traffic volumes would be reduced at the Ocean Avenue/Lee Avenue intersection under Alternative B, as with the proposed project options, Alternative B operations would affect existing freight loading activity and passenger loading/unloading, and could create hazardous conditions to people bicycling or significant delay that may affect transit. Therefore, as with the proposed project options, Alternative B would result in significant secondary effects with respect to loading, but to a lesser extent because Alternative B would reduce project-generated traffic volumes on Lee Avenue compared to the proposed project options. As discussed under Impact TR-6b, p. 3.B-85, given the uncertainty regarding the ability of the existing loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options, Alternative B would result in a ***significant and unavoidable*** impact with respect to loading along Lee Avenue between Ocean Avenue and the project site**.**

Cumulative Impacts

Alternative B would not contribute to any cumulative impacts on vehicle miles traveled, traffic hazards, pedestrian or bicycle travel, loading within the site, emergency vehicle access, or project-specific construction as none were identified.

Alternative B would reduce project-generated traffic volumes and transit trips compared to the proposed project options. However, as discussed under Impact C-TR-4, p. 3.B-94, the cumulative growth in traffic volumes and transit trips associated with implementation of the City College facilities master plan is uncertain at this time and the transit delay contribution from City College in combination with Alternative B is unknown. For the purposes of a more conservative analysis, the addition of vehicle and transit trips generated by Alternative B in combination with the facilities master plan projects and other cumulative development is expected to increase transit delay and exceed the four-minute threshold. As a result, Alternative B, in combination with cumulative projects, would result in significant cumulative transit impacts related to transit delay. Although proposed project traffic volumes would be reduced under Alternative B, as with the proposed project options and variants, Alternative B operations could contribute considerably to significant cumulative transit impacts related to transit delay, but to a lesser extent. As discussed under Impact C-TR-4, p. 3.B-94, given the uncertainty regarding the effectiveness of TDM measures and if SFMTA would approve other measures under their jurisdiction, even with implementation of Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay, p. 3.B-96, as with the proposed project options and variants, Alternative B would result in a ***significant and unavoidable with mitigation*** cumulative impact with respect to transit delay**.**

As with the proposed project options and variants, Alternative B would extend Lee Avenue into the project site, altering Lee Avenue's current status as a dead-end street and de facto loading area for passenger pickup and drop-off and freight deliveries. This reconfiguration of Lee Avenue would reduce the supply of on-street loading available to Whole Foods and nearby land uses. Like the proposed project options, this alternative would convert five metered parking spaces (105 linear feet) to commercial loading along Ocean Avenue between Lee Avenue and Brighton Avenue. Under cumulative conditions, freight and passenger loading activity on the surrounding street network would increase as a result of development projects within the study area. Although Alternative B would reduce project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection compared to the proposed project options, as with the proposed project options, Alternative B operations would affect existing freight loading activity and passenger loading/unloading, and could create hazardous conditions to people bicycling or significant delay that may affect transit. Therefore, as with the proposed project options, Alternative B in combination with cumulative projects would result in significant secondary effects with respect to loading. Alternative B operations could contribute considerably to significant cumulative transit impacts related to public transit delay, but to a lesser extent because Alternative B would reduce project-generated traffic volumes on Lee Avenue compared to the proposed project options. As discussed under Impact C-TR-6b, p. 3.B-101, given the uncertainty regarding the ability of the existing loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options and variants, Alternative B would result in a ***significant and unavoidable*** cumulative impact with respect to loading along Lee Avenue between Ocean Avenue and the project site**.**

Noise

Compared to the proposed project options, under Alternative B, Phase 0 would be the same but would result in less construction activity for Phases 1 and 2 because of the reduced scale of the buildings.

Construction Noise

The construction program for Alternative B would be generally the same as with the proposed project and with the same phasing over a three- or six-year period. The type of construction equipment and use characteristics would not change because demolition, excavation, and construction activities, even though more limited, would still occur. Thus, the potential to generate occasional temporary noise increases of at least 10 dBA over ambient levels at offsite locations along Ocean Avenue, Plymouth Avenue, and at Archbishop Riordan High School and future onsite receptors would remain (see Impact NO-1, p. 3.C-23), and the noise impacts from these activities under Alternative B would also be significant and unavoidable. Similar to the proposed project options and variants, Phase 1 project operations would overlap with Phase 2 construction. The construction noise reduction strategies identified under Mitigation Measure M-NO-1 would reduce the construction noise impact at off-site and on-site sensitive receptor but, as with the proposed project options and variants, this impact would remain ***significant and unavoidable with mitigation***.

Construction Vibration

Under Alternative B, as with the proposed project options and variants, construction activities that generate groundborne vibration would occur, e.g., the use of excavators and vibratory rollers, but existing distances of construction areas from buildings would be sufficient to attenuate vibrations to ***less-than-significant*** levels.

Operational Noise

Fixed Mechanical Equipment

Under Alternative B, emergency diesel generators that would be required under the proposed project would not be required for Alternative B. HVAC equipment would still likely be located on the rooftops. As with the proposed project and project variants, Mitigation Measure M-NO-3, p. 3.C-36, would still be required under Alternative B for rooftop equipment to ensure that proper enclosures or other sound muffling measures would be implemented to meet regulatory requirements established in the City's Noise Ordinance. Therefore, like the proposed project and variants, this impact would be ***less than significant with mitigation***.

Traffic Noise

The mix of uses in Alternative B would be the same as the proposed project options. However, as described above under Transportation and Circulation, Alternative B would result in 24 and 46 percent fewer daily vehicle trips compared to the Developer's Proposed Option and Additional Housing Option, respectively. Therefore, the traffic noise increase would be less than the reported traffic noise increases attributable to the proposed project options and variants, and would be ***less than significant*** (see Impact NO-4, p. 3.C-36).

Cumulative Impacts

Construction-related cumulative noise and vibration impacts under Alternative B would be similar to those of the proposed project options and variants in combination with noise from construction of other nearby projects of City College during the buildout period for the alternative, and noise impacts would continue to be ***significant and unavoidable with mitigation*** (see Impact C-NO-1, p. 3.C-38).

Operational cumulative conditions with the proposed project options and variants, a traffic noise increase would also not be cumulatively considerable as was identified resulting in a less-than-significant cumulative noise impact (see Impact C-NO-2, p. 3.C-40). Alternative B would result in 24 and 46 percent fewer daily vehicle trips compared to the Developer's Proposed Option and Additional Housing Option, respectively, and would also have cumulative noise impacts with operation of Alternative B that would be ***less than significant***.

Like the proposed project, cumulative mechanical equipment noise would have the potential to be a cumulative impact, but with implementation of Mitigation Measure M-NO-3, p. 3.C-36, the project's impact under this alternative would not be cumulatively considerable.

Air Quality

Air quality impacts of the proposed project options are described in SEIR Section 3.D, Air Quality, and as described below, air quality impacts of the alternatives would be similar.

Construction Impacts: Fugitive Dust Emissions

As with the proposed project, construction activities under Alternative B would be required to comply with the City's Construction Dust Control Ordinance, and to implement specified dust control measures. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that like the proposed project options, potential dust related air quality impacts for Alternative B would be ***less than significant***.

Construction and Overlapping Operational Impacts: Criteria Air Pollutant Emissions

As discussed under Impact AQ-2a, p. 3.D-44, construction-related emissions for the Developer's Proposed Option would not exceed any significance thresholds. Therefore, this would be a less-than-significant impact. However, construction-related emissions for the Additional Housing Option would exceed significance thresholds for NOx in 2022, resulting in a significant impact. In addition, as discussed under Impact AQ-2b, p. 3.D-56, overlapping construction and operational emissions for the Developer's Proposed Option would exceed significance thresholds for NOx in 2024, and overlapping construction and operational emissions for the Additional Housing Option would exceed significance thresholds for NOx in 2024, 2026, and 2027. Therefore, this would be a significant impact.

In addition, as discussed above, depending on market conditions and other unanticipated factors, the project may be constructed over a shorter timeframe and Phases 1 and 2 may occur concurrently instead of sequentially; such phasing may result in full project construction over three years instead of six years. If this were to occur, the same amount of construction equipment and hours of operation would be required, but the activity would be compressed into a shorter duration. Therefore, average daily construction emissions would increase. Under this compressed schedule, and as discussed under Impact AQ-2a, pp. 3.D-44, construction-related emissions of NOx for the Developer's Proposed Option would exceed significance thresholds in 2022. Therefore, this would be a significant impact. The exceedances are driven by off-road construction equipment and vendor trucks. For example, in 2023, off-road construction equipment and vendor trips represent approximately 49 and 47 percent of total unmitigated NOx emissions, respectively, for the Developer's Proposed Option.

Alternative B would require less construction activity than the proposed project, given that there would be fewer units to build and smaller building sizes. The total building area for Alternative B would be about 66 percent of the Developer's Proposed Option and 59 percent of the Additional Housing Option; therefore, it is anticipated that total construction emissions for Alternative B, including for off-road equipment and vendor trips, would also be less than the emissions for the Developer's Proposed Option and the Additional Housing Option. However, average daily emissions for Alternative B could remain the same as the proposed project options, although the overall duration of construction may be shorter.

In addition, as discussed above, because the construction schedule for the proposed project options could be compressed into as little as three years, a similar compressed construction schedule could ensue with Alternative B and average daily construction emissions could increase substantially, compared to those with the currently proposed schedule. This would increase NOx emissions and further exceedances of the applicable significance criteria. For the proposed project options, it is anticipated that this shortened construction schedule could result in average daily criteria pollutant emissions that are 1.5 to 2.5 times greater than those presented in SEIR Section 3.D, Air Quality. The same reasoning applies to Alternative B; a shortened construction schedule of 1.5 to two years could result in daily criteria pollutant emissions that are 1.5 to 2.5 times greater than would occur under a compressed construction schedule.

Consequently, the reduced construction activity for Alternative B could still result in NOx emissions in excess of the thresholds of significance. Thus, all construction-related and operational-related mitigation measures identified for the Developer's Proposed Option would be applicable to Alternative B (i.e., Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-2b, Low-VOC Architectural Coatings, p. 3.D-49; M-AQ-2c, On-Road Truck Emissions Minimization for the Compressed Construction Schedule, p. 3.D-52; and M-AQ-2d, Offset Construction and Operational Emissions for the Compressed Schedule, p. 3.D-53). Similar to the proposed project options, Impact AQ-2a would be ***significant and unavoidable with mitigation***, while Impact AQ-2b would be ***less than significant with mitigation***.

Operational Impacts: Criteria Air Pollutant Emissions

For the proposed project options, operational emissions would be below thresholds of significance for all criteria pollutants for both Phase 1 operation in 2024 and full buildout operation in 2027. This is a less-than-significant impact and no mitigation measures are required. Additionally, as discussed under Impact AQ-2b, p. 3.D-56, to reduce combined construction plus operational emissions of NOx, Mitigation Measures M-AQ-2c to M-AQ-2d, pp. 3.D-52 and 3.D-53, would reduce operational emissions associated with the proposed project. However, these mitigation measures are not required to reduce operational emissions by themselves to less-than-significant levels.

Alternative B is anticipated to have lower operational emissions than the proposed project, due to reduced energy use associated with fewer units and conditioned floor space, reduced vehicle trips and associated mobile source emissions, reduced area source emission due to lower architectural coating needs and consumer product use, and potentially reduced stationary source emissions due to fewer emergency generators (likely because this alternative would develop shorter buildings than either project option). Because operational emissions for Alternative B are not anticipated to exceed the significance thresholds for any criteria pollutant, mitigation measures are not required to reduce operational emissions. However, mitigation measures have been identified to reduce combined construction plus operational emissions as discussed under Impact AQ-2b, p. 3.D-56. Thus, the operational-related mitigation measure identified for the proposed project would be applicable to Alternative B (i.e., Mitigation Measures AQ-2d, Offset Construction and Operational Emissions for the Compressed Schedule, p. 3.D-53. With incorporation of these mitigation measures, operational ROG and NOx emissions would be reduced further below the significance thresholds, and this impact would be ***less than significant with mitigation***.

Toxic Air Contaminants, Construction and Operation

Construction and operation of the proposed project options would generate TACs, including diesel particulate matter (DPM), which could expose both offsite and onsite sensitive receptors to a localized health risk. Similar to the proposed project, construction and operation of Alternative B would generate TACs, including DPM. However, as discussed above, Alternative B would result in only approximately 66 percent of the square footage of development of the Developer's Proposed Option; therefore, it is anticipated that total construction-related DPM emissions for Alternative B would also be less than the DPM emissions for the Developer's Proposed Option and the Additional Housing Option is. Similarly, Alternative B would generate fewer vehicle trips than the proposed project, and building heights would be reduced to less than 68 feet, which would eliminate the need for backup diesel generators for all buildings; therefore, Alternative B would result in less operational emissions of DPM and $PM_{2.5}$.

As explained in Section 3.D, Air Quality, for both offsite and onsite receptors not in the air pollutant exposure zone (APEZ), lifetime cancer risk for the proposed project (both options) was found to be less than significant with mitigation, while for offsite receptors already in the APEZ, the unmitigated lifetime cancer risk was found to be less than significant based on modeling; however, because of the potential for a compressed construction schedule, the lifetime cancer risk to off-site receptors already in the APEZ was conservatively judged to be significant and unavoidable. (The compressed construction schedule would not sufficiently increase risk for receptors not currently in the APEZ so as to result in a significant impact after mitigation.)

Given the relative magnitude of development under Alternative B, it is likely that increased cancer risk would be significant in the absence of mitigation. However, with implementation of Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-71; and M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72, lifetime cancer risk to offsite and onsite receptors not in the APEZ under Alternative B would be ***less than significant with mitigation***. With respect to offsite receptors already in the APEZ, lifetime cancer risk under Alternative B would be lower than that of the proposed project options due to less construction and operational activity. However, because the construction schedule may be compressed, potentially increasing the exposure of offsite receptors, impacts related to construction and operational exposure to TACs for receptors in the APEZ would be ***significant and unavoidable with mitigation***. Unlike the proposed project options, Mitigation Measure M-AQ-4a would not be required under this alternative because building heights would be reduced to the extent that backup diesel generators would not be required for any buildings. Similar to conditions with the project options, annual average $PM_{2.5}$ concentrations under Alternative B would be ***less than significant with mitigation*** (Mitigation Measures M-AQ-2a, M-AQ-4a, and M-AQ-4b) for receptors not in the APEZ and ***less than significant*** for receptors in the APEZ.

Consistency with Clean Air Plan

Alternative B would be required to comply with the City's Transportation Demand Management (TDM) ordinance, which would require preparation and implementation of a TDM plan. Similar to the proposed project, Alternative B would require additional mitigation measures to ensure consistency with the Clean Air Plan, and with inclusion of such mitigation measures, this impact would be ***less than significant with mitigation***. In addition to any TDM-related measures, it would be expected that Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-2b, Low-VOC Architectural Coatings, p. 3.D-49; and M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72, would apply to Alternative B.

Odors

Like the proposed project, Alternative B would not create objectionable odors that would affect a substantial number of people. As described for the project, for Alternative B, construction odors associated with diesel-powered vehicles and equipment would be temporary and not likely to extend beyond the project site. During operations, small-scale localized odor issues could occur (e.g., near sources such as solid waste collection, food preparation, etc.), but Alternative B would be required to implement odor controls as required by applicable Bay Area Air Quality Management District regulations that place limitations on odorous substances. Therefore, for Alternative B, odor impacts would be ***less than significant***.

Cumulative Impacts: Regional Air Quality

No single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions.[330] However, the project-level thresholds for criteria air pollutants are based on levels by 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, because emissions from Alternative B are anticipated to exceed the project-level thresholds as explained above, Alternative B would result in a considerable contribution to cumulative regional air quality impacts, a significant impact. Implementation of Mitigation Measures M-AQ-2a through M-AQ-2f, would reduce the severity of this impact; however, because of uncertainties in the implementation of these measures (particularly Mitigation Measure M-AQ-2d), these measures would not reduce the project's contribution to the cumulative impact to a less-than-significant level. Therefore, emissions of criteria air pollutants associated with Alternative B would be cumulatively considerable, and this cumulative impact would be ***significant and unavoidable with mitigation***.

Cumulative Impacts: Health Risks

Alternative B would result in fewer vehicle trips and would not include backup diesel generators, and would, therefore, result in the same cumulative impact determination for $PM_{2.5}$ impact as the proposed project: less than significant with mitigation for all receptors. Additionally, Alternative B would also contribute to a cumulative health risk impact for lifetime cancer risk for offsite and onsite receptors not in the APEZ, but the contribution would be less than significant with implementation of Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48, and M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-71. However, Alternative B would also contribute to a cumulative health risk impact for lifetime cancer risk for offsite receptors in the APEZ, and the contribution is conservatively considered significant and unavoidable, despite implementation of Mitigation Measures M-AQ-2a and M-AQ-4a. Thus, overall, contribution of Alternative B to the cumulative health risk impact would be ***significant and unavoidable with mitigation***.

[330] BAAQMD, *CEQA Air Quality Guidelines*, May 2017, p. 2-1.

Initial Study Topics

The initial study (Appendix B) and Chapter 5, Variants, of this SEIR concluded that the proposed project options and variants would have no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation in the following analysis areas: land use and land use planning, aesthetics, population and housing, cultural resources, tribal cultural resources, greenhouse gas emissions, wind, shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards/hazardous materials, mineral resources, energy, agriculture and forestry resources, and wildfire.

Alternative B would have fewer residential units than the proposed project options and variants, but would have similar amounts of excavation and ground disturbance compared to the Additional Housing Option, because no below grade parking garage is proposed. The number of onsite residents, employees, and construction-related employees would be fewer than the proposed project options or variants. Impacts of Alternative B would be the less than or similar as those of the proposed project options and variants, described in Appendix B, Initial Study, and Chapter 5, Variants, for the following topics: aesthetics, population and housing, cultural resources, tribal cultural resources, greenhouse gas emissions, wind, shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy, agriculture and forest resources, and wildfire. The mitigation measures presented in the initial study would be required under Alternative B.

Ability of the Reduced Density Alternative to Meet Project Objectives

As shown in Table 6-2, p. 6-9, the Reduced Density Alternative (Alternative B) would meet most of the project objectives, but to a lesser degree than the proposed project options. Alternative B would replace an underused surface parking lot on surplus public land with 800 residential units, implementing the goals of the Public Lands of Housing program, General Plan Housing Element, and the 2009 Balboa Park Station Area Plan. This alternative would construct new housing in proximity to local and regional public transportation and would provide pedestrian and bicycle connections from the project site to adjacent neighborhoods. Alternative B would increase the City's housing supply with 800 units and would contribute to progress towards the City's housing goals, but to a lesser extent than the proposed project options (300 and 750 fewer than the Additional Housing Option and Developer's Proposed Option, respectively). Similar to the proposed project options, Alternative B would replace the reservoir's abandoned infrastructure with new infrastructure improvements including new streets, sidewalks, bicycle and pedestrian amenities, utilities, and community facilities. Alternative B would meet the project objectives, but to a lesser degree than the proposed project options, given that Alternative B would not maximize the number of housing units in the project. The financial feasibility of the Reduced Density Alternative is unknown.

Conclusion

Alternative B would not avoid or substantially lessen any of the significant and unavoidable impacts that were identified for the proposed project options or variants. Nor would Alternative B result in changes to the significance determinations identified for the proposed project, and all mitigation measures would apply to this alternative. However, Alternative B would have slightly less severe significant impacts than the proposed project options and variants (i.e., the significance determination would be the same but the severity would be reduced) with respect to the following:

- Significant and unavoidable secondary loading impacts would be slightly less substantial than with the proposed project options due to a reduction in project-generated trips at the Ocean Avenue/Lee Avenue intersection; however, given the uncertainty regarding the ability of the existing loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options, the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable cumulative transit delay impacts would be slightly less substantial than with the proposed project options due to a reduction in project-generated vehicle and transit trips; however, as a result of the addition of vehicle and transit trips generated by Alternative B in combination with City College facilities master plan projects and other cumulative development, and given the uncertainty regarding implementation of transit delay reduction measures and growth associated with implementation of the City College Facilities Master Plan, cumulative transit delay impacts would remain significant and unavoidable even with mitigation.
- Significant and unavoidable cumulative loading impacts would be slightly less substantial than with the proposed project options due to a reduction in project-generated trips at the Ocean Avenue/Lee Avenue intersection; however, given the uncertainty regarding the ability of the future loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options, the cumulative impact would remain significant and unavoidable.
- Significant and unavoidable construction-related increases in ambient noise levels to sensitive receptors would be less than those of the proposed project due to the reduction in the duration and magnitude of construction, but noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable cumulative construction-related noise increases would be lessened compared to those with the project due to the reduced contribution to cumulative construction activities, but the impact would still be significant and unavoidable with mitigation.
- Significant and unavoidable impacts related to construction-related criteria air pollutant emissions would be less substantial than with the proposed project options due to the reduced square footage of development, but emission levels would still exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to construction-generated exposure of sensitive receptors to substantial pollutant concentrations and resulting excess cancer risk would be less substantial than with the proposed project options due to reduced construction activity but would remain significant and unavoidable due to the potential compressed construction schedule, even with mitigation.
- Significant and unavoidable contribution to cumulative regional air quality impacts would be less substantial than with the proposed project options due to the reduced square footage of development, but emission levels would still exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project options and would still apply to Alternative B include impacts related to: archeological resources, human remains, tribal cultural resources, operational noise levels of stationary equipment, Clean Air Plan consistency, and paleontological resources.

Alternative C: San Ramon Way Passenger Vehicle Access Alternative

Alternative C is the San Ramon Way Passenger Vehicle Access Alternative, shown in **Figure 6-3, Alternative C: San Ramon Way Passenger Vehicle Access**. The purpose of this alternative is three-fold: (1) to address numerous public comments requesting that vehicle access to the project site from San Ramon Way be considered; (2) to lessen potentially hazardous conditions or significant delay due to the project's reconfiguration of Lee Avenue, which would preclude the current use of the curbside for truck deliveries; and (3) to lessen potential cumulative transit delay.

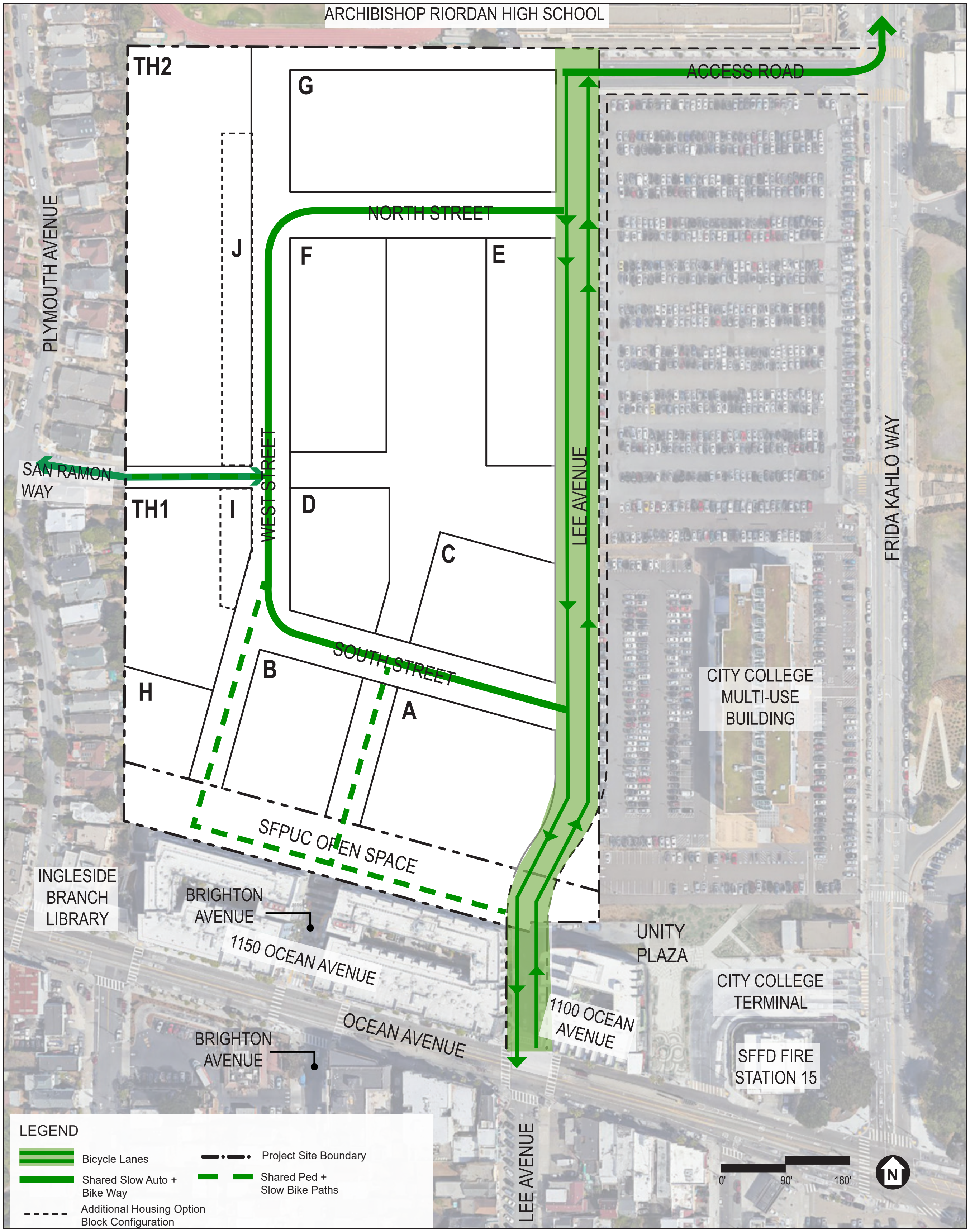
Description of the San Ramon Way Passenger Vehicle Access Alternative

Alternative C is the San Ramon Way Passenger Vehicle Access Alternative, which would provide access for light vehicles (i.e., passenger cars and vans, but not heavy trucks)[331] to the project site from the west and could be combined with either of the proposed project options. Alternative C would have the same mix of land uses, site plans, building footprints, building heights, square footages, and construction characteristics as the proposed project options. Vehicle, bicycle, and pedestrian circulation to and from the site from the south and east would not change. However, instead of bicycle and pedestrian-only access at San Ramon Way, Alternative C would also include vehicular (non-truck) access, providing access to and from the west.

San Ramon Way currently terminates just west of the project site; it does not extend all the way to the project site boundary, as the Westwood Park Association (homeowners' association for the Westwood Park neighborhood that is west of the project site) owns an approximately 10-foot-wide parcel between the end of the street and the project site. Therefore, in order for this alternative to be implemented, the city would have to purchase or otherwise secure access through this parcel.

San Ramon Way is approximately 26 feet wide with a 6-foot-wide sidewalk on the north side and a 7- to 10-foot-wide sidewalk on the south side. Parking is currently allowed on both sides of the street. Under Alternative C, the current dimensions of San Ramon Way would be retained and extended through the project site, ending at West Street. Given the San Francisco Fire Department requirement[332] for a 26-foot-wide clear path of travel, the need to accommodate two-way vehicle traffic and increase in vehicle traffic along San Ramon Way associated with Alternative C, it is assumed that six on-street parking spaces each on the north and south sides of San Ramon Way (a total of 12) would be removed under this alternative. San Ramon Way would have a 13-foot-wide single lane of travel in each direction, a 6-foot-wide sidewalk on the north side, and a 7- to 10-foot-wide sidewalk on the south side. San Ramon Way from West Street to Plymouth Avenue would be a shared roadway that would include class III bicycle facilities (sharrows) within the vehicular lanes.

[331] See further discussion regarding this restriction below.
[332] 2010 San Francisco Fire Code sections 503 and Appendix D, Section D105, *https://sf-fire.org/501-street-widths-emergency-access, accessed June 18, 2019.*



SOURCE: Van Meter Williams Pollack LLP, 2019

Case No. 2018-007883ENV: Balboa Reservoir Project

Figure 6-3
Alternative C: San Ramon Way Passenger Vehicle Access

Alternative C would have the same land uses as the proposed project and could be implemented with either project option. Therefore, this alternative would provide between 1,100 and 1,550 residential units, 7,500 square feet of commercial space, and 10,000 square feet of community space, along with between 650 and 1,300 off-street parking spaces in buildings up to 78 or 88 feet in height, depending on option.

San Francisco Transportation Code section 501(b) limits the operation of a vehicle with gross weight in excess of 6,000 pounds (3 tons) in the Westwood Park area streets. Therefore, vehicles exceeding the weight limit would be prohibited from traveling on San Ramon Way into or out of the project site, like existing conditions. However, exemptions to San Francisco Transportation Code section 501(b) apply for vehicles such as emergency vehicles and commercial vehicles making deliveries by direct route to and from that portion of the restricted streets.

Construction

Construction of Alternative C would be similar to the proposed project options, both in magnitude and duration. In general, the same types of construction activities and equipment would be required. Construction trucks and equipment would access the project site from the north access road, similar to the proposed project options. As part of this alternative, construction truck traffic would be prohibited from using San Ramon Way to and from the project site. Construction of Alternative C would take about the same amount of time as the proposed project options. It is anticipated that construction would start in 2021 and be completed in 2024 or 2027, the same three- or six-year construction duration as the proposed project. Construction would occur in three phases, similar to the proposed project. Like the proposed project, actual construction dates would be subject to changes due to market conditions and other unanticipated factors. Therefore, construction could be completed as early as 2024 or extend beyond 2027. Similar to the proposed project options, if construction occurs over a shorter period than shown in SEIR Chapter 2, Table 2-2, Preliminary Construction Schedule by Phase, p. 2-38 (e.g., Phases 1 and 2 occurring simultaneously following Phase 0), a relatively larger amount of construction would take place during a relatively shorter period of time, thereby increasing the typical daily construction activity.

Impacts of the San Ramon Way Passenger Vehicle Access Alternative

Transportation and Circulation

Travel Demand and Transportation Network Changes

Alternative C would have the same size and mix of land uses as the proposed project options. Therefore, the person-trip and vehicle-trip generation and number of trips people would make to and from the project would be the same as those of the proposed project options (see SEIR **Table 3.B-10** to **Table 3.B-14**, pp. 3.B-40 to 3.B-44). However, because San Ramon Way would be open to non-truck vehicular access under Alternative C, some vehicles would take different paths of travel than would be the case with the proposed project options.

The trip assignment (assumed travel routes for vehicle trips) for Alternative C was developed for weekday a.m. and p.m. peak periods using the following process:

- Identify the origin/destination districts where project-generated vehicles would be most likely to use the San Ramon Way access based on existing travel patterns and route/travel time data from Google Maps.
- Calculate the number of inbound and outbound vehicle trips traveling between the project site and each identified district.
- Reassign these vehicle trips to the surrounding street network and study intersections based on existing travel patterns and route/travel time data from Google Maps.

Based on review of existing travel patterns and route/travel time data, vehicle trips originating from or destined to the Richmond, Sunset, Outer Mission/Hills, North Bay, and Marina Western districts were reassigned from either the Frida Kahlo Way/North Access or Ocean Avenue/Lee Avenue entrances to the new San Ramon Way entrance.

Developer's Proposed Option

Some vehicle trips generated by the Developer's Proposed Option were relocated to San Ramon Way under Alternative C, as shown in **Table 6-4, Relocation of the Developer's Housing Option Project-Generated Vehicle Trips**.

TABLE 6-4
RELOCATION OF THE DEVELOPER'S HOUSING OPTION PROJECT-GENERATED VEHICLE TRIPS

	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour		
Site Entrance	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
San Ramon Way	13	18	***31***	34	14	***48***
Relocated Vehicle Trips						
North Access Road	-1	-2	***-3***	-6	-3	***-9***
Lee Avenue	-12	-16	***-28***	-28	-11	***-39***
Total	***-13***	***-18***	***-31***	***-34***	***-14***	***-48***

SOURCE: Kittelson & Associates Inc., 2019.

As shown in Table 6-4, under this alternative, 31 vehicles (approximately 12 percent of project-generated vehicle trips) would utilize the San Ramon Way access during the weekday a.m. peak hour and 48 vehicles (15 percent of project-generated vehicle trips) would utilize the San Ramon Way access during the weekday p.m. peak hour. During the weekday a.m. peak hour, 13 vehicles would enter and 18 vehicles would exit the site at that location. During the weekday p.m. peak hour, 34 vehicles would enter and 14 vehicles would exit the site at that location.

As shown in Table 6-4, this increase in vehicle traffic utilizing the San Ramon Way access would correspond to a decrease in the same number of vehicles utilizing the Frida Kahlo Way/North Access and Ocean Avenue/Lee Avenue access. Project-generated vehicle trips at the Frida Kahlo Way/North Access intersection would be reduced by three vehicles (one entering and one exiting) (3 percent of project-generated vehicle traffic at this intersection) during the weekday a.m. peak hour and nine vehicles (six entering and three exiting) (8 percent of project-generated vehicle traffic) during the weekday p.m. peak hour. Project-generated vehicle trips at the Ocean Avenue/Lee Avenue intersection would be reduced by 28 vehicles (12 entering and 16 exiting) (19 percent of project-generated vehicle traffic at this intersection) during the weekday a.m. peak hour and 39 vehicles (28 entering and 11 exiting) (19 percent of project-generated traffic) during the weekday p.m. peak hour.

Additional Housing Option

Some vehicle trips generated by the Additional Housing Option were relocated to San Ramon Way under Alternative C, as shown in **Table 6-5, Relocation of the Additional Housing Option Project-Generated Vehicle Trips**. Under this alternative, approximately 41 vehicles (12 percent of project-generated vehicle trips) would utilize the San Ramon Way access during the weekday a.m. peak hour and (62 vehicles) 15 percent of project-generated vehicle trips would utilize the San Ramon Way access during the weekday p.m. peak hour. During the weekday a.m. peak hour, 16 vehicles would enter and 25 vehicles would exit the site at that location. During the weekday p.m. peak hour, 45 vehicles would enter and 17 vehicles would exit the site at that location.

TABLE 6-5
RELOCATION OF THE ADDITIONAL HOUSING OPTION PROJECT-GENERATED VEHICLE TRIPS

	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour		
Site Entrance	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
San Ramon Way	16	25	*41*	45	17	*62*
Relocated Vehicle Trips						
North Access Road	-1	-11	*-12*	-3	-8	*-11*
Lee Avenue	-15	-14	*-29*	-42	-9	*-51*
Total	*-16*	*-25*	*-41*	*-45*	*-17*	*-62*

SOURCE: Kittelson & Associates Inc., 2019.

As shown in Table 6-5, this increase in vehicle traffic utilizing the San Ramon Way access would correspond to a decrease in the same number of vehicles utilizing the Frida Kahlo Way/North Access and Ocean Avenue/Lee Avenue access. Project-generated vehicle trips at the Frida Kahlo Way/North Access intersection would be reduced by 12 vehicles (one entering and 11 exiting) (9 percent of project-generated vehicle traffic) during the weekday a.m. peak hour and 11 vehicles (three entering and eight exiting) (7 percent of project-generated vehicle traffic) during the weekday p.m. peak hour. Project-generated vehicle trips at the Ocean Avenue/Lee Avenue intersection would be reduced by 29 vehicles (15 entering and 14 exiting) (15 percent of project-generated vehicle traffic) during the weekday a.m. peak hour and 51 vehicles (42 entering and 29 exiting) (19 percent of project-generated vehicle traffic) during the weekday p.m. peak hour.

Construction Impacts

As with the proposed project options, Alternative C would be constructed in three phases over a three or six-year period. Construction truck traffic, truck routing, and construction worker vehicle parking would all occur as under the proposed project options. Construction truck traffic would be prohibited from using San Ramon Way to and from the project site. Therefore, construction-period transportation effects would be the same under this alternative as with the proposed project options and variants. All requirements applicable to the proposed project options and variants would be applicable to Alternative C. Therefore, as with the proposed project options and variants, Alternative C would also result in a less-than-significant construction-related transportation impact. PEIR Improvement Measure (Construction) is superseded by the requirements of the blue book regulations, which include the development of a construction management plan and review and approval by the SFMTA and public works to address overall coordination of construction activities, transportation-related circulation, access, and staging.

Operational Impacts

As shown in Table 6-5, this increase in vehicle traffic utilizing the San Ramon Way access would correspond to a decrease in the same number of vehicles utilizing the Frida Kahlo Way/North Access and Ocean Avenue/Lee Avenue access. Project-generated vehicle trips at the Frida Kahlo Way/North Access intersection would be reduced by 12 vehicles (one entering and 11 exiting) (9 percent of project-generated vehicle traffic) during the weekday a.m. peak hour and 11 vehicles (three entering and eight exiting) (7 percent of project-generated vehicle traffic) during the weekday p.m. peak hour. Project-generated vehicle trips at the Ocean Avenue/Lee Avenue intersection would be reduced by 29 vehicles (15 entering and 14 exiting) (15 percent of project-generated vehicle traffic) during the weekday a.m. peak hour and 51 vehicles (42 entering and 29 exiting) (19 percent of project-generated vehicle traffic) during the weekday p.m. peak hour.

Potentially Hazardous Conditions Impacts

Intersection turning movement counts collected at San Ramon Way/Plymouth Avenue/Southwood Drive on August 28, 2018, show that there are a total of 268 vehicles at the five-legged all-way stop controlled intersection during the weekday a.m. peak hour, including three vehicles (one eastbound/inbound and two westbound/outbound) traveling on San Ramon Way between Plymouth Avenue and the project site. During the weekday p.m. peak hour, there are a total of 226 vehicles at this intersection, including five vehicles (four eastbound/inbound and one westbound/outbound) traveling on San Ramon Way between Plymouth Avenue and the project site.

San Ramon Way between Plymouth Avenue and the project site is approximately 26 feet wide with a 6-foot-wide sidewalk on the north side and a 7- to 10-foot-wide sidewalk on the south side. There are currently two active curb cuts serving the adjacent residential buildings and residential permit parking is provided on both sides of the street. Provision of on-street parking narrows the effective roadway width to approximately 10 feet wide in some locations, and two-way vehicle travel is not feasible on this segment. Currently when there is oncoming traffic, one vehicle must find space to pull over and wait for the other vehicle to pass before continuing. These instances are rare and this is not an issue under existing conditions due to the low traffic volumes on the segment.

As discussed above, under Alternative C with the Developer's Proposed Option a total of 31 vehicles (13 inbound, 18 outbound) would utilize the San Ramon Way entrance during the weekday a.m. peak hour and 48 vehicles (34 inbound, 14 outbound) would utilize the San Ramon Way entrance during the p.m. peak hour. Under Alternative C with the Additional Housing Option a total of 41 vehicles (16 inbound, 25 outbound) would utilize the San Ramon Way entrance during the weekday a.m. peak hour and 62 vehicles (45 inbound, 17 outbound) would utilize the San Ramon Way entrance during the p.m. peak hour.

The Developer's Proposed Option would increase vehicle traffic at the San Ramon Way/Plymouth Avenue/Southwood Drive intersection by about 12 percent during the weekday a.m. peak hour and by about 21 percent during the weekday p.m. peak hour. The Additional Housing Option would increase vehicle traffic at the San Ramon Way/Plymouth Avenue/Southwood Drive intersection by about 15 percent during the weekday a.m. peak hour and by about 27 percent during the weekday p.m. peak hour. Beyond this intersection, the majority of project-generated vehicles would travel along Plymouth Avenue to and from the project site.

Assuming removal of parking on both sides of San Ramon Way between Plymouth Avenue and the project site and striping two 12- to 13-foot wide travel lanes and class III bicycle facilities (sharrows), this level of vehicle traffic could be accommodated on San Ramon Way. Given the width of the travel lanes and the relatively low level of vehicle traffic volumes on this segment under existing plus project conditions (a maximum of 67 vehicles [49 inbound/westbound, 18 outbound/eastbound] during the weekday p.m. peak hour with the Additional Housing Option) the proposed project is not expected to pose potentially hazardous conditions due to the low traffic volumes.

The primary access points for people walking to the project site would be from the northern extension of Lee Avenue, through Unity Plaza, the pedestrian paseos connecting to Brighton Avenue and San Ramon Way, and the shared use path connecting to Plymouth Avenue. The addition of project-generated vehicle traffic to San Ramon Way under Alternative C would increase the potential for conflicts between project-generated vehicles and people walking to the site. However, drivers would generally be traveling at speeds less than 25 miles per hour and would have unobstructed sightlines and/or substantial sight distance to see people walking on the sidewalk and bicycling along the shared roadway. Therefore, Alternative C would not create potentially hazardous conditions for people walking or bicycling.

The addition of project-generated vehicle traffic to the surrounding streets, including Plymouth Avenue, Southwood Drive, and San Ramon Way west of Plymouth Avenue, would result in slower vehicle speeds on these streets. Given the narrow width of these streets, 25 to 26 feet with on-street parking on both sides, the addition of vehicle traffic generated by the project would increase instances of oncoming traffic and where there is not sufficient space for vehicles to pass side-by-side, one driver would need to pull over and yield to allow the other driver to pass. When opposing traffic volume increases, particularly on narrow streets where drivers must either pull over and stop to let other vehicles pass or where the perception of street width is too narrow to judge accurately, there is a strong correlation with reduced average travel speed.[333] On-street parking density plays an important role in defining the effective width of the street. On narrow streets such as these, with a relatively high density of parking, the effective width can be as narrow as a single travel lane forcing a driver to pull over and stop when an opposing vehicle is encountered. While the increase in traffic volumes and related reduction in travel speed may increase the potential for sideswipe incidents, because it would reduce travel speeds, it would likely create a more

[333] Daisa, James M. and Peers, John B. ITE Journal, *Narrow Residential Streets: Do They Really Slow Down Speeds?*, available at *https://nacto.org/docs/usdg/narrow_residential_streets_daisa.pdf*, accessed April 24, 2019.

comfortable environment for people walking and bicycling, and overall, Alternative C would not create potentially hazardous conditions for people driving.

Alternative C would reduce the project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection under both proposed project options and compared to the Developer's Proposed Option and Additional Housing Option would result in less frequent and shorter duration of vehicles blocking the City College Terminal and would not create potentially hazardous conditions for public transit operations.

As discussed above, because the project would not create potentially hazardous conditions for people walking, bicycling, driving or public transit operations, impacts of Alternative C would be ***less than significant***.

Accessibility and Emergency Access Impacts

Alternative C does not involve any changes to the roadway network or include any design features that would interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.

With the assumed modifications to San Ramon Way, specifically removal of parking on both sides of the street east of Plymouth Street, the street would provide sufficient clear width (approximately 26 feet) for emergency vehicle access and to meet fire department requirements.[334] San Ramon Way would provide one additional evacuation and emergency access point to the project site and nearby hospitals as compared to existing conditions and conditions with the proposed project options and variants.

Alternative C would reduce the project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection under both proposed project options and, compared to the Developer's Proposed Option and Additional Housing Option, would result in less frequent and shorter duration of vehicles blocking the fire department station 15 entrance and would not result in inadequate emergency access.

Under existing conditions there are a total of 268 vehicles and 226 vehicles at the Plymouth Avenue/San Ramon Way/Southwood Drive intersection during the weekday a.m. and p.m. peak hours, respectively. Alternative C would increase traffic volumes at this intersection by a maximum of 62 vehicles during the weekday p.m. peak hours under the Additional Housing Option. Alternative C would result in an increase in vehicle traffic above existing conditions and result in slower vehicle speeds on streets within the Westwood Park neighborhood, including Plymouth Avenue, Southwood Drive, and San Ramon Way west of Plymouth Avenue. Given the narrow width of these streets, 25 to 26 feet with on-street parking on both sides, the addition of vehicle traffic generated by the project would increase instances of oncoming traffic and where there is not sufficient space for vehicles to pass side-by-side, one driver would need to pull over and yield to allow the other driver to pass. Drivers would pull over into available on-street parking spaces or driveway curb cuts.

334 San Francisco Fire Code section 503.2.1, *http://sf-fire.org/501-street-widths-emergency-access*, accessed May 25, 2018.

Based on data collected along Plymouth Avenue between Ocean Avenue and Greenwood Avenue, parking utilization ranges between 40 percent and 88 percent with between 37 and 81 vehicle parking spaces available during the weekday a.m. (9 a.m.), midday (2 p.m.), and p.m. (8 p.m.) periods.[335] Additionally, there are multiple driveway curb cuts with frequent spacing along Plymouth Avenue. Assuming the maximum number of project-generated vehicle trips using the San Ramon Way entrance (62 vehicles) accessed the site via Plymouth Avenue between Monterey Boulevard and San Ramon Way (45 inbound/southbound, 17 outbound/northbound) during the weekday p.m. peak hour, there would be a total of 168 vehicles traveling southbound and 103 vehicles traveling northbound on this segment of San Ramon Way. This is a conservative assumption, given that drivers would not be concentrated along Plymouth Avenue north of the project site and would access the site using other streets, including Plymouth Avenue between Ocean Avenue and San Ramon Way. While the addition of vehicle traffic generated by the project would increase instances of oncoming traffic, drivers would have sufficient opportunities to pull over into available on-street parking spaces or driveway curb cuts. In the event of an emergency, drivers would be able to pull out of the way of emergency vehicles, and the addition of project-generated vehicle traffic would not significantly impede emergency vehicle travel. Therefore, the proposed project would not result in inadequate emergency access and impacts of Alternative C would be ***less than significant***.

Transit Impacts

As with the proposed project options and variants, Alternative C would not result in the relocation or removal of any existing transit stops or other changes that would alter transit service. Alternative C would generate the same number of transit trips distributed to the same transit lines and would therefore result in the same amount of passenger boarding delay as the proposed project options. The project-generated vehicle trips would be redistributed under Alternative C such that there would be fewer vehicle trips traveling along Ocean Avenue and Frida Kahlo Way. Therefore, compared to the proposed project options, Alternative C would result in less traffic congestion and transit delay. Additionally, Alternative C would reduce the project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection under both proposed project options and compared to the Developer's Proposed Option and Additional Housing Option would result in less frequent and shorter duration of vehicles blocking the City College Terminal.

Given the considerations described above, Alternative C would have a ***less-than-significant*** impact on transit delay.

VMT Impacts

The vehicle miles traveled for Alternative C is the same as under the proposed project options. The existing average daily VMT per capita for residential, retail, and office uses are more than 15 percent below the existing and future regional averages. Therefore, as with the proposed project options and variants, Alternative C would have a ***less-than-significant*** impact related to VMT.

335 IDAX, On-Street Parking Utilization Data, February 2019.

Loading Impacts

As with the proposed project and variants, Alternative C would extend Lee Avenue into the project site, altering Lee Avenue's current status as a dead-end street and de facto freight loading area, as well as its use for passenger loading. This reconfiguration of Lee Avenue would effectively reduce the supply of on-street loading available to Whole Foods and nearby land uses, notwithstanding the fact that the current loading activity is not in compliance with the conditions of approval for the 1150 Ocean Avenue project. Like the proposed project options, Alternative C would also convert five metered parking spaces (105 linear feet) to commercial loading along Ocean Avenue between Lee Avenue and Brighton Avenue.

The addition of vehicular access at San Ramon Way would alter travel patterns to and from the project site. As described above, Alternative C would reduce project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection by 28 vehicles during the weekday a.m. peak hour and 39 vehicles during the weekday p.m. peak hour for the Developer's Proposed Option, and by 29 vehicles during the weekday a.m. peak hour and 51 vehicles during the weekday p.m. peak hour for the Additional Housing Option. Project-generated traffic volumes would be reduced by 19 percent at the Ocean Avenue/Lee Avenue intersection under Alternative C, which would meaningfully reduce the potential for conflicts between loading activities compared to that of the project options. Nevertheless, as with the proposed project options and variants, Alternative C operations could adversely affect freight loading/unloading and passenger pick-up and drop-off may create hazardous conditions for people walking or bicycling, and could result in increased queues that delay transit and other vehicles, but to a lesser extent than the proposed project options and variants. Therefore, as such, as with the proposed project options and variants, Alternative C would result in significant secondary effects with respect to loading. As discussed under Impact TR-4, p. 3.B-73, no feasible mitigation measures were identified and Alternative C would result in a ***significant and unavoidable*** impact with respect to loading.

Cumulative Impacts

Alternative C would not contribute to any cumulative impacts on vehicle miles traveled, traffic hazards, pedestrian or bicycle travel, loading within the site, emergency vehicle access, or project-specific construction as none were identified.

As discussed under Impact C-TR-4, p. 3.B-94, the cumulative growth in traffic volumes and transit trips associated with implementation of the City College facilities master plan is uncertain at this time and the transit delay contribution from City College in combination with the proposed project options is uncertain. For the purposes of a more conservative analysis, the addition of vehicle and transit trips generated by Alternative C in combination with City College facilities master plan projects and other cumulative development is expected to increase transit delay and exceed the four-minute threshold. As a result, Alternative C, in combination with cumulative projects, could contribute considerably to significant cumulative transit impacts related to transit delay and given the uncertainty of City College's contribution, the cumulative transit impact is significant and unavoidable. Although traffic volumes would be redistributed under Alternative C, as with the proposed project options and variants, Alternative C operations could contribute considerably to significant cumulative transit impacts related to transit delay. As discussed under Impact C-TR-4, p. 3.B-94, given the uncertainty regarding the effectiveness of TDM measures and if SFMTA would approve other measures under their jurisdiction, even with implementation of Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay, p. 3.B-96, as with the proposed project options and variants, Alternative C would result in a ***significant and unavoidable with mitigation*** cumulative impact with respect to transit delay.

As with the proposed project options and variants, Alternative C would extend Lee Avenue into the project site, altering Lee Avenue's current status as a dead-end street and de facto loading area for passenger pickup and drop-off and freight deliveries. This reconfiguration of Lee Avenue would reduce the supply of on-street loading available to Whole Foods and nearby land uses. Like the project, this alternative would convert five metered parking spaces (105 linear feet) to commercial loading along Ocean Avenue between Lee Avenue and Brighton Avenue. Under cumulative conditions, freight and passenger loading activity on the surrounding street network would increase as a result of development projects within the study area. Although Alternative C would reduce project-generated traffic volumes at the Ocean Avenue/Lee Avenue intersection compared to the proposed project options, as with the proposed project options and variants, Alternative C operations would affect existing freight loading activity and passenger loading/unloading, and could create hazardous conditions for people bicycling or significant delay that may affect transit. Therefore, as with the proposed project options and variants, Alternative C in combination with cumulative projects would result in significant secondary effects with respect to loading, but to a lesser extent because Alternative C would reduce project-generated traffic volumes on Lee Avenue compared to the proposed project options. As discussed under Impact C-TR-6b, p. 3.B-101, given the uncertainty regarding the ability of the existing loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options, Alternative C would result in a ***significant and unavoidable*** cumulative impact with respect to loading along Lee Avenue between Ocean Avenue and the project site**.**

Noise

Compared to the proposed project options, under Alternative C there would be the same amount of demolition and construction activity. There would be a negligible amount of additional construction for the San Ramon Way access point. The construction program for Alternative C would be the same as with the proposed project options. Therefore, impacts of Alternative C would the same as those of the proposed project options and variants. Construction-related and operational-related mitigation measures identified for the proposed project options and variants would be applicable to Alternative C (i.e., Mitigation Measure M-NO-1, Construction Noise Control Measures, p. 3.C-30; and Mitigation Measure M-NO-3, Fixed Mechanical Equipment Noise Controls, p. 3.C-36). Alternative C impacts for construction noise would be ***significant and unavoidable with mitigation*** (Impact NO-1, p. 3.C-23, and Impact C-NO-1, p. 3.C-38); construction vibration would be ***less than significant*** (Impact NO-2, p. 3.C-32), and operational noise related to fixed mechanical equipment would be ***less than significant with mitigation*** (Impact NO-3, p. 3.C-33).

Operational Traffic

The mix of uses in Alternative C would be the same as the mix in the proposed project and project variants. However, trip distribution would change with the added ingress and egress point of San Ramon Way. Specifically, the San Ramon way access point would result in 29 additional vehicles on Plymouth Avenue between San Ramon Way and Monterey Boulevard during the a.m. peak traffic hour and 45 additional vehicles during the p.m. peak traffic hour in the Developers Project Option and 59 additional vehicles during the p.m. peak traffic hour in the Additional Housing Option. Using available data for the segment of Plymouth Avenue between Ocean Avenue and Southwood Drive,[336] roadside noise levels under this alternative for the Developer's Proposed Option and Additional Housing Option would increase by 1.0 and 1.3 dBA, respectively. These increases would be imperceptible to most people and would be well below the applicable threshold of 5 dBA, resulting in a less-than-significant impact with respect to roadside traffic noise. Therefore, the traffic noise increase would be ***less than significant*** for Alternative C.

Cumulative Impacts

Under cumulative conditions with the proposed project options, noise impacts would be less than significant (see Impact C-NO-2, p. 3.C-40). Alternative C would result in the same or smaller contributions to cumulative roadways of concern (Frida Kahlo Way and City College North) due to the availability of the San Ramon access point on all roadways except San Ramon Way and Plymouth Avenue. Neither the Developers Proposed Option nor the Additional Housing Option, in combination with cumulative traffic growth in from the City College facilities master plan projects, would result in a cumulatively considerable contribution to localized roadside noise levels along cumulative roadways of concern. Therefore, cumulative noise impacts with operation of Alternative C would continue to be less than significant.

Like the proposed project, cumulative mechanical equipment noise would have the potential to be a cumulative impact but with implementation of Mitigation Measure M-NO-3, p. 3.C-36, the project's impact under this alternative would not be cumulatively considerable.

Air Quality

Compared to the proposed project options, under Alternative C there would be the same amount of demolition and construction activity. As with the proposed project options and variants, construction activities under Alternative C would be required to comply with the Construction Dust Control Ordinance, and to implement specified dust control measures. Therefore, fugitive dust impacts of Alternative C would the same as those of the proposed project options, as described in Impact AQ-1, p. 3.D-43, and potential dust related air quality impacts for Alternative C would be ***less than significant***. In addition, the construction program for Alternative C would be the same as with the proposed project options. Therefore, construction impacts of Alternative C would the same as those of the proposed project options, as described in Impact AQ-2a and Impact AQ-2b, pp. 3.D-44 and 3.D-56, respectively. Thus, all construction-related and operational-related mitigation measures identified for the proposed project options and variants would be applicable to Alternative C (i.e., Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-2b, Low-VOC Architectural Coatings, p. 3.D-49; M-AQ-2c, On-Road Truck Emissions Minimization for the Compressed Construction Schedule, p. 3.D-52; and M-AQ-2d, Offset Construction and Operational Emissions for the Compressed Schedule, p. 3.D-53). Similar to the proposed project options and variants, Impact AQ-2a would be ***significant and unavoidable with mitigation***, while Impact AQ-2b would be ***less than significant with mitigation***.

[336] Leahy, Amanda, Kittleson Associates, e-mail communication to ESA on April 25, 2019.

Alternative C would also have the same land uses as the proposed project options and variants. Therefore, operational impacts of Alternative C would the same as those of the proposed project options, as described in Impact AQ-3, p. 3.D-62. However, mitigation measures have been identified to reduce combined construction and operational emissions, as discussed under Impact AQ-2b, p. 3.D-56. Thus, the operational-related mitigation measure identified for the proposed project would be applicable to Alternative C (i.e., Mitigation Measures M-AQ-2d, Offset Construction and Operational Emissions for the Compressed Schedule, p. 3.D-53. With incorporation of these mitigation measures, operational ROG and NOx emissions would be reduced further below the significance thresholds, and this impact would remain at ***less-than-significant*** levels.

Alternative C would be required to comply with the City's Transportation Demand Management (TDM) ordinance, which would require preparation and implementation of a TDM plan. Similar to the proposed project, Alternative C would require additional mitigation measures to ensure consistency with the Clean Air Plan, and with inclusion of such mitigation measures, this impact would be ***less than significant with mitigation***.

Like the proposed project options and variants, Alternative C would not create objectionable odors that would affect a substantial number of people, as discussed in Impact AQ-6, p. 3.D-87. Therefore, for Alternative C, odor impacts would be ***less than significant***.

Because emissions from Alternative C are anticipated to exceed the project-level thresholds as explained above, Alternative C would result in a considerable contribution to cumulative regional air quality impacts, a significant impact. Therefore, emissions of criteria air pollutants associated with Alternative C would be cumulatively considerable, and this cumulative impact would be ***significant and unavoidable with mitigation***.

TACs, Construction and Operation

Construction and operation of the proposed project would generate TACs, including DPM, which could expose both offsite and onsite sensitive receptors to a localized health risk. Similar to the proposed project, construction and operation of Alternative C would generate TACs, including DPM. Given that Alternative C would have the same construction and operational activity as the proposed project, it is anticipated that Alternative C would result in similar construction and operational emissions of DPM and $PM_{2.5}$.

Under Alternative C, because San Ramon Way would be open to vehicular access, the location or assignment of vehicle trips would be different compared to the proposed project options. Some vehicle traffic would use San Ramon Way to access the site, potentially increasing the exposure of both offsite residential receptors along San Ramon Way as well as onsite residential sensitive receptors close to the San Ramon Way ingress / egress point (such as the townhomes) to DPM and TACs contained in total organic compounds (TOG) from gasoline vehicle exhaust associated with this traffic. However, as discussed above, most trucks (all during construction and only those that allow exceptions during operation) are restricted from traveling on San Ramon Way into or out of the project site. Therefore, exposure of these offsite and onsite residential sensitive receptors to DPM emissions would be minimal. The cancer risk associated with TOG emissions from gasoline vehicle exhaust is extremely small compared with cancer risk associated with DPM from construction activity (0.1 to 0.2 percent of the total construction plus operations risk at any of the maximally exposed receptors), so it is not anticipated that the new TAC/TOG exposure associated with Alternative C would increase cancer risks at any offsite residential sensitive receptor near San Ramon Way. For operational risk only, the lifetime excess cancer risk due to operational vehicle TOG exposure at offsite sensitive receptor locations along the roadways where vehicles will travel for the proposed project, such as near Lee Avenue, ranges from 0.2 to 0.4; it is expected that the increased cancer risk from Alternative C along San Ramon Way would be lower. Therefore, the new exposure associated with TAC emissions from vehicles traveling along San Ramon Way for Alternative C would be less than significant.

Given that Alternative C would develop the same land uses as the proposed project options, increased cancer risk under Alternative C would be significant in the absence of mitigation, as with the project options and variants. However, with implementation of Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-71; and M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72, lifetime cancer risk to offsite and onsite receptors under Alternative C is anticipated to be similar to that of the proposed project due to a similar amount of construction activity. Therefore, with mitigation, Alternative C would not result in offsite sensitive receptor locations meeting the APEZ criterion for cancer risk, and impacts related to construction and operational exposure to TACs for receptors not in the APEZ would be ***less than significant with mitigation***. With respect to offsite receptors already in the APEZ, vehicles traveling on San Ramon Way would not increase exposure to sensitive receptors located in the APEZ. The closest APEZ receptors to the project site are located near I-280, far from San Ramon Way. Therefore, Alternative C is not expected to result in any new impacts for receptors in the APEZ. However, similar to the proposed project options, because the construction schedule is subject to change, potentially increasing the exposure of offsite receptors, impacts related to construction and operational exposure to TACs for receptors in the APEZ would be ***significant and unavoidable with mitigation***.

Similar to the analysis above for cancer risk for receptors not in the APEZ, annual average $PM_{2.5}$ concentrations for Alternative C are expected to be similar to the proposed project, and the new vehicle travel along San Ramon Way is not anticipated to increase annual average $PM_{2.5}$ concentrations by any significant margin. As with the proposed project options, annual average $PM_{2.5}$ concentrations for Alternative C would be ***less than significant with mitigation*** (Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-71; M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-49; and M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72) for receptors not in the APEZ and ***less than significant*** for receptors in the APEZ. Annual average $PM_{2.5}$ concentrations associated with light-duty vehicles traveling near the project site represents a small percentage of total annual average $PM_{2.5}$ concentrations for all sources associated with the proposed project, and the relatively low project traffic volumes that would use the San Ramon Way access under this alternative would not substantially affect $PM_{2.5}$ concentrations on or near San Ramon Way or alter the above conclusions.

Cumulative Impacts: Health Risks

Alternative C would result in the same construction activity and operational activity, including vehicle trips and backup diesel generators, and would therefore, result in the same cumulative impact determination for $PM_{2.5}$ impact as the proposed project: less than significant with mitigation for all receptors. Additionally, Alternative C would also contribute to a cumulative health risk impact for lifetime cancer risk for offsite and onsite receptors not in the APEZ, but the contribution would be less than significant with implementation of Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48, and M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-71. However, Alternative C would also contribute to a cumulative health risk impact for lifetime cancer risk for offsite receptors in the APEZ, and the contribution is conservatively considered significant and unavoidable, despite implementation of Mitigation Measures M-AQ-2a and M-AQ-4a. Thus, overall, contribution of Alternative C to the cumulative health risk impact would be ***significant and unavoidable with mitigation***.

Initial Study Topics

Alternative C would be the same as the proposed project options, including the same residential units and same area of ground disturbance, but would include vehicular access to the site via San Ramon Way. As a result, the number of onsite residents, employees, and construction-related employees would be the same as the proposed project options. Impacts of Alternative C would be the same as those of the proposed project options and variants, described in Appendix B, Initial Study, and Chapter 5, Variants, for the following topics: aesthetics, population and housing, cultural resources, tribal cultural resources, greenhouse gas emissions, wind, shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy, agriculture and forest resources, and wildfire.

Land Use and Land Use Planning

Alternative C would be the same as the proposed project options but would provide more integration with the surrounding neighborhood than the proposed project options because San Ramon Way would provide pedestrian, bicycle, and vehicle access. Alternative C would have the same ***less-than-significant*** project-level land use impacts as the proposed project options (see Appendix B, Initial Study, Section E.1, Land Use and Planning, p. B-12), and would not combine with other cumulative land uses changes to generate a significant cumulative land use and land use planning impact.

Ability of the San Ramon Way Access Alternative to Meet Project Objectives

The San Ramon Way Access alternative would fully meet all project objectives, as detailed in Table 6-2, p. 6-9. Additional vehicle access from San Ramon Way would not reduce this alternative's ability to meet project objectives compared to the proposed project options. The San Ramon Way Access Alternative would build the same number and mix of housing units as the proposed project options, and the same infrastructure, open space, and streetscape improvements would be constructed.

Conclusion

Alternative C would not avoid or substantially lessen any of the significant and unavoidable impacts that were identified for the proposed project options or variants. Nor would Alternative C result in changes to the significance determinations identified for the proposed project, and all mitigation measures would apply to this alternative. However, Alternative C would have slightly less severe significant impacts than the proposed project options and variants (i.e., the significance determination would be the same but the severity would be reduced) with respect to the following:

- Significant and unavoidable secondary loading impacts would be slightly less substantial than with the proposed project options due to a reduction in project-generated trips at the Ocean Avenue/Lee Avenue intersection; however, given the uncertainty regarding the ability of the existing loading demand to be accommodated and the lack of feasible mitigation measures identified, as with the proposed project options, the impact would remain significant and unavoidable.
- Significant and unavoidable cumulative transit delay impacts would occur as a result of the addition of vehicle and transit trips generated by Alternative C in combination with City College facilities master plan and other cumulative development, but would be slightly less substantial than with the proposed project options. Cumulative transit delay impacts would remain significant and unavoidable even with mitigation.
- Significant and unavoidable cumulative loading impacts would be slightly less substantial than with the proposed project options due to a reduction in project-generated trips at the Ocean Avenue/Lee Avenue intersection; however, given the uncertainty regarding the ability of the future loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options, the cumulative impact would remain significant and unavoidable.

Significant and unavoidable impacts identified for the project that would not be substantially reduced under Alternative C and would still occur include the following:

- Significant and unavoidable construction-related increases in ambient noise levels to sensitive receptors would be the same as those of the proposed project because the construction program for Alternative C would be the same as with the proposed project options. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable cumulative construction-related noise increases would be the same as those of the proposed project because the construction program for Alternative C would be the same as with the proposed project options and the impact would still be significant and unavoidable with mitigation.
- Significant and unavoidable impacts related to construction-related criteria air pollutant emissions would be the same as those of the proposed project options, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to overlapping construction and operational criteria air pollutant emissions would be the same as those of the proposed project options, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to construction-generated exposure of sensitive receptors to substantial pollutant concentrations and resulting excess cancer risk would be the same as those of the proposed project options and would remain significant and unavoidable due to the potential compressed construction schedule, even with mitigation.

- Significant and unavoidable contribution to cumulative regional air quality impacts would be the same as those of the proposed project options, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project options and would still apply to Alternative C include impacts related to: archeological resources, human remains, tribal cultural resources, operational noise levels of stationary equipment, Clean Air Plan consistency, and paleontological resources.

Alternative D: Six-Year Construction Alternative

Alternative D is the Six-Year Construction Phasing Alternative. The purpose of this alternative is to address significant construction-related impacts identified for air quality under the potential compressed three-year construction schedule.

Description of the Six-Year Construction Alternative

Alternative D would have the same mix of land uses, site plans, circulation, building footprints, building heights, square footages, and construction characteristics as the proposed project options. This alternative would not allow a compressed construction schedule. Therefore, under Alternative D, construction phasing for the proposed project options would be phased as described in Chapter 2, Project Description, under the six-year construction schedule. As shown in Table 2-2, the initial phase (Phase 0) would include demolition of the parking lot, west side berm, and north and east embankments, followed by grading, excavation, and construction of site infrastructure over 12 months from 2021 to 2022. After Phase 0 is complete, construction of Phase 1 would occur from 2022 to 2024. Construction of Phase 2 would occur from 2024 to 2027, after Phase 1 is complete. Alternative D could be combined with the proposed project options, variants, and Alternatives B and C. Thus, under Alternative D, there would be no compressed construction schedule scenario and Phases 1 and 2 would not be constructed concurrently.

Transportation and Circulation

Project- and cumulative-level construction and operational transportation and circulation impacts would be the same as under the proposed project options. Cumulative operational-related mitigation measures identified for the proposed project options and variants would be applicable to Alternative D (i.e., Mitigation Measure M-C-TR-4, Monitor Cumulative Transit Travel Times and Implement Measures to Reduce Transit Delay, p. 3.B-96). Alternative D impacts for cumulative transit delay would be ***significant and unavoidable with mitigation*** (Impact C-TR-4, p. 3.B-94).

Noise

Operational noise impacts under Alternative D would be exactly the same as under the proposed project as the construction schedule would remain unchanged from the schedule as shown in Table 2-2. Compared to the proposed project options, under Alternative D there would be the same amount of demolition and construction activity. Therefore, construction noise impacts of Alternative D would the same as those of the proposed project options and variants. Construction- and operational-related mitigation measures identified for the proposed project options and variants would be applicable to Alternative D (i.e., Mitigation Measure M-NO-1, Construction Noise Control Measures, p. 3.C-30; and Mitigation Measure M-NO-3, Fixed Mechanical Equipment Noise Controls, p. 3.C-36). Alternative D impacts for construction noise would be ***significant and unavoidable with mitigation*** (Impact NO-1, p. 3.C-23, and Impact C-NO-1, p. 3.C-38); construction vibration would be ***less than significant*** (Impact NO-2, p. 3.C-32), and operational and cumulative noise related to fixed mechanical equipment would be ***less than significant with mitigation*** (Impact NO-3, p. 3.C-33).

Air Quality

Compared to the proposed project options, under Alternative D there would be the same amount of demolition and construction activity. As with the proposed project options and variants, construction activities under Alternative D would be required to comply with the Construction Dust Control Ordinance, and to implement specified dust control measures. Therefore, fugitive dust impacts of Alternative D would the same as those of the proposed project options, as described in Impact AQ-1, p. 3.D-43, and potential dust related air quality impacts for Alternative D would be ***less than significant***.

Alternative D would also have the same land uses as the proposed project options and variants. Therefore, operational impacts of Alternative D would the same as those of the proposed project options, as described in Impact AQ-3, p. 3.D-62, and would be ***less than significant***. However, mitigation measures have been identified to reduce combined construction and operational emissions, as discussed under Impact AQ-2b, p. 3.D-56. Thus, the operational mitigation measure identified for the proposed project would be applicable to Alternative D (i.e., Mitigation Measures M-AQ-2d, Offset Construction and Operational Emissions for the Compressed Schedule, p. 3.D-53). With incorporation of these mitigation measures, operational ROG and NOx emissions would be reduced further below the significance thresholds, and this impact would remain at ***less-than-significant*** levels.

Alternative D would be required to comply with the City's Transportation Demand Management (TDM) ordinance, which would require preparation and implementation of a TDM plan. Similar to the proposed project, Alternative D would require additional mitigation measures to ensure consistency with the Clean Air Plan, and with inclusion of such mitigation measures, this impact would be ***less than significant with mitigation***.

Like the proposed project options and variants, Alternative D would not create objectionable odors that would affect a substantial number of people, as discussed in Impact AQ-6, p. 3.D-87. Therefore, for Alternative D, odor impacts would be ***less than significant***.

Construction and Overlapping Operational Impacts: Criteria Air Pollutant Emissions

As discussed under Impact AQ-2a, p. 3.D-44, construction-related emissions for the Developer's Proposed Option would not exceed any significance thresholds. Therefore, this would be a less-than-significant impact. However, construction-related emissions for the Additional Housing Option under the six-year construction schedule would exceed significance thresholds for NOx in 2022, resulting in a significant impact. In addition, as discussed under Impact AQ-2b, p. 3.D-56, overlapping construction and operational emissions for the Developer's Proposed Option under the six-year construction schedule would exceed significance thresholds for NOx in 2024, and overlapping construction and operational emissions for the Additional Housing Option under the six-year construction schedule would exceed significance thresholds for NOx in 2024, 2026, and 2027. Therefore, this would be a significant impact. However, unlike the proposed project options that would result in a significant and unavoidable impact with mitigation, with no potential three-year compressed construction schedule under Alternative D, each of these impacts would be mitigated to a ***less-than-significant*** level through implementation of Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48, and M-AQ-2b, Low-VOC Architectural Coatings, p. 3.D-49.

Toxic Air Contaminants, Construction and Operation

Similar to the proposed project, construction and operation of Alternative D would generate TACs, including DPM, and like the project options, under Alternative D, lifetime cancer risk for both offsite and onsite receptors not in the air pollutant exposure zone (APEZ) would be ***less than significant with mitigation*** (Mitigation Measures M-AQ-2a, Construction Emissions Minimization, p. 3.D-48; M-AQ-4a, Diesel Backup Generator Specifications, p. 3.D-71; and M-AQ-4b, Install MERV 13 Filters at the Daycare Facility, p. 3.D-72), while for offsite receptors already in the APEZ, the unmitigated lifetime cancer risk would be ***less than significant***, as with the project options.

Cumulative Impacts: Regional Air Quality

As discussed above, no single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions.[337] However, the project-level thresholds for criteria air pollutants are based on levels by 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, because emissions from Alternative D are not anticipated to exceed the project-level thresholds with implementation of Mitigation Measures M-AQ-2a and M-AQ-2b, as explained above, Alternative D would not result in a considerable contribution to cumulative regional air quality impacts, a less-than-significant impact. Unlike the proposed project options which would result in a significant and unavoidable impact with mitigation, emissions of criteria air pollutants associated with Alternative D would not be cumulatively considerable, and this cumulative impact would be ***less than significant with mitigation***.

Cumulative Impacts: Health Risks

Alternative D would result in the same construction activity and operational activity, including vehicle trips and backup diesel generators, and would therefore, result in the same cumulative impact determination for $PM_{2.5}$ impact as the proposed project: less than significant with mitigation for all receptors. Additionally, Alternative D would also contribute to a cumulative health risk impact for lifetime cancer risk for offsite and onsite receptors not in the APEZ, but the contribution would be less than significant with implementation of Mitigation Measure M-AQ-2a, Construction Emissions Minimization, p. 3.D-48. Finally, Alternative C would also contribute to a cumulative health risk impact for lifetime cancer risk for offsite receptors in the APEZ, but the contribution would be less than significant with implementation of Mitigation Measure M-AQ-2a. Unlike the

[337] BAAQMD, *CEQA Air Quality Guidelines*, May 2017, p. 2-1.

proposed project options which would result in a significant and unavoidable impact with mitigation, overall, contribution of Alternative D to the cumulative health risk impact would be ***less than significant with mitigation***.

Initial Study Topics

Alternative D would be the same as the proposed project options and variants including the same residential units and same area of ground disturbance. As a result, the number of onsite residents, employees, and construction-related employees would be the same as the proposed project options. Impacts of Alternative D would be the same as those of the proposed project options and variants, described in Appendix B, Initial Study, and Chapter 5, Variants, for the following topics: aesthetics, population and housing, cultural resources, tribal cultural resources, greenhouse gas emissions, wind, shadow, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy, agriculture and forest resources, and wildfire.

Ability of the Six Year Construction Schedule Alternative to Meet Project Objectives

The Six Year Construction Schedule alternative would fully meet all project objectives, as detailed in Table 6-2, p. 6-9 if applied to the proposed project options and variants.

Conclusion

Alternative D would substantially lessen the severity of the following impacts, reducing it from significant and unavoidable with mitigation to less than significant with mitigation:

- Significant and unavoidable impacts related to construction-related criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable impacts related to construction-generated exposure of sensitive receptors to substantial pollutant concentrations and resulting excess cancer risk would be reduced to less than significant with mitigation.
- Significant and unavoidable contribution to cumulative regional air quality impacts would be reduced to less than significant with mitigation.
- Significant and unavoidable contribution to cumulative health risk impacts would be reduced to less than significant with mitigation.

Significant and unavoidable impacts identified for the project that would not be substantially reduced under Alternative D and would still occur include the following:

- Significant and unavoidable secondary loading impacts would be the same as the proposed project options due to the same operational characteristics. Alternative D would have the same project-generated trips at the Ocean Avenue/Lee Avenue intersection; therefore, given the uncertainty regarding the ability of the existing loading demand to be accommodated and the lack of feasible mitigation measures identified, as with the proposed project options, the impact would remain significant and unavoidable.
- Significant and unavoidable cumulative transit delay impacts would occur as a result of the addition of vehicle and transit trips generated by Alternative D in combination with City College facilities master plan projects and other cumulative development, and would be the

same as the proposed project options. Cumulative transit delay impacts would remain significant and unavoidable even with mitigation.

- Significant and unavoidable cumulative loading impacts would be the same as the proposed project options. Alternative D would have the same project-generated trips at the Ocean Avenue/Lee Avenue intersection; therefore, given the uncertainty regarding the ability of the future loading demand to be accommodated and the lack of feasible mitigation measures, as with the proposed project options, the cumulative impact would remain significant and unavoidable.
- Significant and unavoidable construction-related increases in ambient noise levels to sensitive receptors would be the same as those of the proposed project because the construction program for Alternative D would be the same as with the proposed project options. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable cumulative construction-related noise increases would be the same as those of the proposed project because the construction program for Alternative D would be the same as with the proposed project options and the impact would still be significant and unavoidable with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project options and would still apply to Alternative D include impacts related to: archeological resources, human remains, tribal cultural resources, operational noise levels of stationary equipment, Clean Air Plan consistency, and paleontological resources.

6.D Environmentally Superior Alternative

The CEQA Guidelines section 15126.6(e) requires the identification of an environmentally superior alternative to the proposed project. Based on the analysis and comparison of the impacts of the alternatives presented above, the No Project Alternative would be the environmentally superior alternative because it would result in no impacts to all resources. However, the No Project Alternative would not meet any of the project objectives. While the No Project Alternative would offer environmental advantage over the proposed project, 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.

Table 6-6, Comparison of Environmental Impacts of the Proposed Project Options to Impacts of the Alternatives, identifies the level of impact for the proposed project options 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) and whether the impact of the alternative would be the same as, less than, or greater than the proposed project options impacts. In some cases, the proposed project options and alternative would result in the same significance determination, but the degree of that impact with the alternative might be less than or greater than the proposed project options.

If the No Project Alternative is environmentally superior, then the EIR must identify another environmentally superior alternative from among the alternatives evaluated, if the proposed project options have significant impacts that cannot be mitigated to a less-than-significant level. The environmentally superior alternative is the alternative that best avoids or lessens any significant effects of the proposed project, even if the alternative would impede to some degree the attainment of the project objectives.

Therefore, among all of the alternatives including the "no project" alternative, Alternative D, Six-Year Construction Schedule, is considered the environmentally superior alternative. Alternative D would meet all of the project objectives and would avoid and substantially reduce the severity of project- and cumulative-level impacts related to construction-related air quality and health risks.

It is also possible that Alternative D could be combined with Alternative B by the decision makers, which could lessen the severity of the significant and unavoidable adverse impacts related to project-level and cumulative loading on Lee Avenue between Ocean Avenue and the project site; cumulative transit delay; project-level and cumulative construction-related increases in ambient noise levels to sensitive receptors; and further reduce project-level and cumulative construction-related air quality and health risks compared to the impacts of the proposed project options. The combination of Alternative B and D would result in less severe environmental impacts than the proposed project options and variants. However, as described previously, the financial feasibility of Alternative B is unknown.

TABLE 6-6
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
Summary of Impacts for Topics in this SEIR				
SEIR Section 3.B, Transportation and Circulation				
Impact TR-6b: Operation of the proposed project, including proposed street network changes, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. (SU)	NI <	**SU** **<**	**SU** **<**	**SU** **=**
Impact C-TR-4: The proposed project, in combination with reasonably foreseeable future projects, may result in a potentially significant cumulative impact related to public transit delay and the project could contribute considerably. (SUM)	NI <	**SUM** **<**	**SUM** **<**	**SUM** **=**
Impact C-TR-6b: Operation of the proposed project, including proposed street network changes, in combination with reasonably foreseeable future projects, would impact existing passenger and freight loading zones along Lee Avenue between Ocean Avenue and the project site, and may create potentially hazardous conditions for people bicycling and may substantially delay public transit. (SU)	NI <	**SU** **<**	**SU** **<**	**SU** **=**
All other transportation impacts LTS	NI <	LTS ≤	LTS ≤	LTS =
SEIR Section 3.C, Noise				
Impact NO-1: Project construction would cause a substantial temporary or periodic increase in ambient noise levels at noise-sensitive receptors above levels existing without the project. (SUM)	NI <	**SUM** **<**	**SUM** **=**	**SUM** **=**
Impact NO-3: Operation of the fixed mechanical equipment on the project site could result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, and permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance. (LSM)	NI <	LSM =	LSM =	LSM =
Impact C-NO-1: Cumulative construction of the proposed project, in combination with construction of reasonably foreseeable future projects, could cause a substantial temporary or periodic increase in ambient noise levels. (SUM)	NI <	**SUM** **<**	**SUM** **=**	**SUM** **=**

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE 6-6
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
Impact C-NO-3: Cumulative mechanical equipment noise of the proposed project, in combination with reasonably foreseeable future projects, could cause a substantial permanent increase in ambient noise levels in the project vicinity, but the proposed project would not contribute considerably. (LSM)	NI <	LSM =	LSM =	LSM =
All other noise impacts LTS	NI <	LTS <	LTS =	LTS =
SEIR Section 3.D, Air Quality				
Impact AQ-2a: During construction, the proposed project would generate criteria air pollutants that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (SUM)	NI <	**SUM <**	**SUM =**	LSM <
Impact AQ-2b: During construction phases that overlap with project operations, the proposed project would generate criteria air pollutants that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (LSM)	NI <	LSM <	LSM =	LSM <
Impact AQ-4: Construction and operation of the proposed project would generate toxic air contaminants, including DPM, which could expose sensitive receptors to substantial pollutant concentrations. (SUM)	NI <	**SUM <**	**SUM =**	**LSM <**
Impact AQ-5: The proposed project could conflict with implementation of the Bay Area 2017 Clean Air Plan. (LSM)	NI <	LSM =	LSM =	LSM =
Impact C-AQ-1: The proposed project, in combination with reasonably foreseeable future projects, would contribute to cumulative regional air quality impacts. (SUM)	NI <	**SUM <**	**SUM =**	**LSM <**
Impact C-AQ-2: The proposed project, in combination with reasonably foreseeable future projects, could contribute to cumulative health risk impacts on sensitive receptors. (SUM)	NI <	**SUM =**	**SUM =**	**LSM <**
All other air quality impacts LTS	NI <	LTS <	**LTS =**	**LTS =**

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= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE 6-6
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
Summary of Impacts for Topics in the Initial Study				
Initial Study Section E.1, Land Use and Land Use Planning				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.2, Aesthetics				
N/A	N/A	N/A	N/A	N/A
E.3, Population and Housing				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.4, Cultural Resources				
Impact CR-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to section 15064.5. (LSM)	NI <	LSM =	LSM =	LSM =
Impact CR-3: The proposed project may disturb human remains, including those interred outside of formal cemeteries. (LSM)	NI <	LSM =	LSM =	LSM =
All other cultural resources impacts LTS	NI <	LTS =	LTS =	LTS =
E.5, Tribal Cultural Resources				
Impact TC-1: The proposed project may result in a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074. (LSM)	NI <	LSM =	LSM =	LSM =
E.9, Greenhouse Gas Emissions				
All impacts LTS	NI <	LTS <	LTS =	LTS =

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NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE 6-6
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
E.10, Wind				
All impacts LTS	NI <	LTS <	**LTS** **=**	LTS =
E.11, Shadow				
All impacts LTS	NI <	LTS <	**LTS** **=**	LTS =
E.12, Recreation				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.13, Utilities and Service Systems				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.14, Public Services				
All impacts LTS	NI <	LTS <	LTS =	LTS =
E.15, Biological Resources				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.16, Geology, Soils, and Paleontological Resources				
Impact GE-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site. (LSM)	NI <	LSM =	LSM =	LSM =
All other geology, soils, and paleontological resource impacts LTS	NI <	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

TABLE 6-6
COMPARISON OF ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT OPTIONS TO IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact of Proposed Project Options[a]	Alternative A: No Project	Alternative B: Reduced Density	Alternative C: San Ramon Way Passenger Vehicle Access	Alternative D: Six-Year Construction Schedule
E.17, Hydrology and Water Quality				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.18, Hazards and Hazardous Materials				
All impacts LTS	NI <	LTS =	LTS =	LTS =
E.19, Mineral Resources, E.21, Agriculture and Forestry Resources, and E.22, Wildfire				
All impacts NI	NI =	NI =	NI =	NI =
E.20, Energy				
All impacts LTS	NI <	LTS <	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable. All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:
[a] See SEIR Chapter 3 and Appendix B for complete impact statements.

6.E Alternatives Considered but Rejected

Potential project alternatives were considered as part of the alternatives screening process for this SEIR. As stated in CEQA Guidelines section 15126.6(f)(1), factors that may be considered when a lead agency is assessing the feasibility include:

> … site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.

Potential alternatives were identified from review of scoping comments received following issuance of the Notice of Preparation. The alternatives considered but rejected and the reasons they have been rejected from further analysis are described below.

6.E.1 Alternatives Identified During Scoping

During the scoping process for this SEIR and initial study, individuals and organizations raised concerns regarding the need to consider alternatives to the proposed project as summarized in Chapter 1, Introduction, Table 1-1, Summary of Scoping Comments, p. 1-6. The concepts raised during scoping included: (1) a reduced intensity (both height and density) alternative, (2) San Ramon Way connection alternative, (3) alternative location, (4) higher density alternative, and (5) alternative uses. Two of these concepts have been incorporated into the selected alternatives and are analyzed in Section 6.C, p. 6-11. The first concept is addressed under Alternative B, Reduced Density Alternative; and the second concept is addressed under Alternative C, San Ramon Way Access Alternative. The remaining concepts were considered but rejected, as discussed below.

6.E.2 Alternatives Considered but Rejected

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. While an alternative location might lessen or avoid the operational impacts associated with transportation and circulation and construction impacts associated with noise and air quality, it was rejected from further consideration because the project objectives are specific to the Balboa Reservoir site, based on policy considerations evaluated by the city. Construction noise impacts would occur regardless of the site or scale of the project, and no on-site alternative strategies would eliminate these effects. These impacts are associated with any project that involves demolition, grading, excavation, and/or building construction activities. For this reason, an alternative location for the same number of dwelling units would likely result in the same potential noise impacts and require the same mitigation measures if demolition, grading, and excavation were required, and because the same number of units would be built. Moreover, no feasible alternative locations within the Balboa Park Station Area Plan area exist for an equivalent or similar level of housing development, including affordable housing. No comparable parcel of land is available within the plan area that the project sponsor could reasonably acquire, control, or otherwise have access. An alternative location, if one were available, would not be consistent with the project objectives related to developing the reservoir site with a mixed-use residential neighborhood, including a substantial number of affordable housing units, site infrastructure, and bicycle and pedestrian connections. Furthermore, an alternative location would not meet the project objective related to developing an underutilized site under the Public Land for Housing program.

One site identified under the Public Land for Housing in the plan area was the 2-acre site at 2340 San Jose Avenue, known as the Upper Yard. A developer for the Upper Yard was selected in 2016 and a building permit was issued in 2018 for the construction of 131 residential units; thus, the Upper Yard location, which is an order of magnitude smaller than the proposed project, is not available to the project sponsor for development. For these reasons, an alternative location was rejected from further consideration.

Higher Density Alternative

Variations of a higher density alternative were raised during the scoping process for this SEIR. A higher density alternative could meet all project objectives, however, this alternative would not address any of the significant and unavoidable environmental impacts. Therefore, this alternative was rejected from further consideration.

Lee Avenue Exit Only Alternative

This alternative would allow southbound egress from the project site onto Ocean Avenue via Lee Avenue and prohibit northbound ingress to the site from Ocean Avenue via Lee Avenue. Two-way operations of Lee Avenue between Ocean Avenue and the project site would be maintained only for delivery vehicles that require access to the Whole Foods off-street loading dock. This alternative would reduce the number of project-generated vehicles on Ocean Avenue, thereby reducing transit delay along the corridor; however, it would limit access to the project site and add vehicle traffic to Frida Kahlo Way and, potentially, to San Ramon Way, if the San Ramon Way Passenger Vehicle Access Alternative were selected. The westbound right-turn lane at Ocean Avenue/Frida Kahlo Way/Geneva Avenue and the northbound left-turn lane at Frida Kahlo Way/North Access Road currently operate near or over capacity during the peak hours, and the additional vehicle traffic under this alternative could cause spillover into the through lanes, which would cause delays to transit on Ocean Avenue and Frida Kahlo Way.

The alternative would not reduce conflicts between people bicycling southbound on Lee Avenue and loading vehicles accessing the loading dock or conducting curbside loading on Lee Avenue. Additionally, people unfamiliar with the site access and circulation may attempt to enter the site from northbound Lee Avenue and would either: (1) complete a U-turn maneuver and continue to the Frida Kahlo Way/North Access Road entrance or (2) ignore the one-way operations and continue north to enter the site. These actions would result in potentially hazardous conditions and conflicts between vehicles making a U-turn and vehicles exiting the Whole Foods driveway or accessing the loading dock and between vehicles continuing north on Lee Avenue and oncoming southbound traffic.

For these reasons, southbound exit-only operations on Lee Avenue was rejected from further consideration.

Alternative Uses

Open Space Only Alternative

This alternative would develop the project site with only open space uses, and no residential uses. The Open Space Only Alternative was rejected from further consideration because it would not meet most of the key project objectives related to providing housing to address citywide demand for housing, and building a mixed-income community including affordable units.

Fully Affordable Housing Alternative

This concept was raised during the scoping period for the SEIR. A Fully Affordable Housing Alternative would include 100 percent affordable housing at the project site. A 100 percent affordable housing alternative would not meet the project objective to build "a **mixed-income** community with a high percentage of affordable units to provide housing options for households at **a range of income levels**" (emphasis added). This alternative also would potentially fail to meet, or at least fully meet, the following project objective:

- Develop a project that is financially feasible and able to support the financial investment that will be required to realize it, including equity and debt return levels that will be required by investors and lenders to finance residential developments, as well as eligibility for required federal, state, regional, and local sources of subsidy for infrastructure and utility construction and affordable housing.

Additionally, this alternative could reduce the ability to meet the following additional project objective that is specific to the City and County of San Francisco and the SFPUC:

- Provide SFPUC's water utility ratepayers with fair market value for this utility land asset as required by the city's charter and applicable law.

Finally, a 100 percent affordable housing development on the project site would not constitute an alternative to the proposed project, but would arguably be a fundamentally different project. The process that has led to the publication of this SEIR began in 2016 with the issuance of a request by the SFPUC for development team qualifications for a residential project the Balboa Reservoir site.[338] The first of the primary project objectives set forth in that request for qualifications (RFQ) was as follows:

- Under the City's Public Lands for Housing Program, create a mixed-income housing project that maximizes the amount of affordable housing for low, moderate, and middle-income San Franciscans, while enhancing the communities around it.

The RFQ went on to specify that at least 33 percent of the housing units must be permanently affordable to low- or middle-income households, including at least 18 percent of units affordable to low-income households (up to 55 percent of area median income) and at least 15 percent of units affordable to low or moderate-income households (up to 120 percent of area median income). Furthermore, to "ensure that the project's overall affordable housing serves a diverse group of households ranging from low-income to middle-income," an additional 17 percent of units were required to be permanently affordable in perpetuity at a range of affordability levels (up to

338 SFPUC, Request for Qualifications for Balboa Reservoir Property, November 10, 2016.

150 percent of area median income), with prices set at least 15 percent below market rate. Moreover, 100 percent affordable housing developments in San Francisco are typically sponsored by the Mayor's Office of Housing and Community Development, which provides substantial financial support for such projects and which typically seeks out not-for-profit developers who specialize in the production of fully affordable residential projects. Accordingly, it has never been the case that the planning for this project assumed or required a 100 percent affordable housing development, which would require a substantially different financial structure and City development partner(s). Nevertheless, as described in SEIR Chapter 2, a total of up to 50 percent of the new units under the proposed project would be designated affordable to persons earning between 55 and 120 percent of the area median income, depending on market surveys, funding source restrictions and other stakeholder input on the affordable housing plan. The proposed project options, as well as Alternative C, San Ramon Way Access, and Alternative D, Six-Year Construction Schedule, would aim to maximize housing on the project site.

The foregoing notwithstanding, this alternative was briefly considered from an environmental perspective. It is unlikely that this alternative would eliminate the project's significant, unavoidable impacts, for the following reasons, as set forth for each significant unavoidable impact:

Transportation and Circulation

- **Impact on passenger and freight loading on Lee Avenue and potential hazardous conditions for people bicycling and delays for transit (Impact TR-6b).** While evidence supports the proposition that affordable housing results in a reduction in vehicle trips, the anticipated reduction in vehicle trips would not result in a decrease in peak-hour vehicle trips sufficient to reduce this impact to a less-than-significant level if the project site were developed at a comparable intensity in terms of the number of units, even if 100 percent of units were affordable. According to the May 2014 study, households with income levels that do not exceed area median income and are located near transit are estimated to generate less household VMT than moderate- and higher-income households.[339]

  The project option analyses did not consider affordability in its travel demand analysis for estimating peak-hour vehicle trips because VMT is not directly comparable to peak-hour vehicle trips.[340] If data were available to allow for such comparison, it is possible the project peak hour vehicle trips may be lowered if affordability data were included. Further increasing the affordability at the project site may further lower the project peak hour vehicle trips.

  Even if the site includes only affordable housing and generates fewer vehicle trips than the project options, it is unlikely that this impact would be reduced to less-than-significant levels because the conditions that are causing the significant impact would not be avoided: extension of Lee Avenue, potentially hazardous conditions for people bicycling, and queue of right-turning vehicles in the rightmost travel lane that may result in some drivers shifting to the center lane shared by public transit. Further, given the uncertainty regarding the ability of the existing

339 The 20 to 37 percent reduction in vehicle trips is from Transform and California Housing Partnership Corporation, Why Creating and Preserving Affordable Homes Near Transit is a Highly Effective Climate Protection Strategy, May 2014 (*https://www.transformca.org/sites/default/files/CHPC%20TF%20Affordable%20TOD%20Climate%20Strategy%20BOOKLET%20FORMAT.pdf*), cited in the San Francisco Planning Department's Transportation Demand Management Technical Justification, June 2016; updated January 22, 2018 (*http://default.sfplanning.org/transportation/tdm/TDM_Technical_Justification_update2018.pdf*).

340 The model used for VMT analysis accounts for demographics in estimating background VMT.

loading demand to be accommodated and the lack of feasible mitigation measures identified, as with the proposed project options, the impact would remain significant and unavoidable.

- **Cumulative impact on transit delay impact resulting from increased vehicle traffic and transit ridership (Impact C-TR-4).** The reduction in peak-hour vehicle traffic and transit ridership, assuming comparable development of affordable housing, would not reduce this impact to a less-than-significant level. Even with the reduction in peak-hour vehicle traffic and transit ridership, the project, in combination with cumulative projects, could result in a significant cumulative public transit delay impact given the uncertainty of City College's contribution to cumulative delay and the project's contribution could be cumulatively considerable at greater than two minutes of delay on K/T Third/Ingleside, 29 Sunset, 43 Masonic, and 49 Van Ness/Mission lines. The impact would remain significant and unavoidable with mitigation.
- **Cumulative impact on passenger and freight loading on Lee Avenue and potential hazardous conditions for people bicycling and delays for transit (Impact C-TR-6b).** This impact would not be reduced to a less-than-significant level for the same reason as discussed above for Impact TR-6b.

Noise

- **Construction noise impact (Impact NO-1).** Assuming a comparable level of development of affordable housing to the density proposed under the project, this impact would result in little or no change in construction noise, given that development of affordable housing generally requires the same construction techniques and equipment as market-rate housing. This impact would remain significant and unavoidable.
- **Cumulative construction noise impact (Impact C-NO-1).** This impact would not be reduced to a less-than-significant level for the same reason as discussed above for Impact NO-1.

Air Quality

- **Construction air quality impacts (Impacts AQ-2a).** Assuming a comparable level of development of affordable housing to the density proposed under the project, this impact would result in little or no change in construction air quality impacts, given that development of affordable housing generally requires the same construction techniques and equipment as market-rate housing. These impacts would remain significant and unavoidable.
- **Construction health risk impact (Impact AQ-4).** This impact would not be reduced to a less-than-significant level for the same reason as discussed above for Impacts AQ-2a and AQ-2b.
- **Cumulative construction air quality and health risk impacts (Impacts C-AQ-1 and C-AQ-2).** This impact would not be reduced to a less-than-significant level for the same reason as discussed above for Impacts AQ-2a and AQ-4.

Use Site for City College

This concept was raised during the scoping period for the SEIR and was suggested in the context of concerns with housing for teachers and students, and loss of parking at the site. Concepts for the site included using the project site entirely for future expansion of City College facilities; and maintaining the majority of parking at the site and providing student or teacher housing. These alternatives were considered but would not necessarily eliminate the significant, unavoidable construction-related air quality and operational loading impacts of the proposed project options; or reduce other impacts of the proposed project options that are less than significant with mitigation. These alternatives also would not meet project objectives to implement the goals of the

Public Lands for Housing Program, and would not provide a mixed-income community with a substantial amount of new housing to address citywide demand for housing. Furthermore, the project site is under the jurisdiction of the SFPUC and not part of City College property or planned for development under the college's facilities master plan.

Water Storage

This concept was raised during the scoping period for the SEIR and would develop the site for water storage only. It is unknown the length and intensity of constructing a water storage facility for the site. Therefore, it is unknown if this alternative would reduce the significant, unavoidable construction-related air quality and noise impacts. This alternative could potentially reduce or eliminate the significant, unavoidable operational loading impacts of the proposed project options; and reduce other impacts of the proposed project options that are less than significant with mitigation. However, this alternative was rejected from further consideration because it would not meet most of the key project objectives related to providing housing to address citywide demand for housing, and building a mixed-income community including affordable units. San Francisco's drinking water is supplied by 13 reservoirs and seven tanks that store 440 million gallons, and the Balboa Reservoir site does not contribute in any way to water supply or storage, as it is not and never was a functioning reservoir as was originally intended and planned for the site.[341]

[341] San Francisco Public Utilities Commission, *Hetch Hetchy: The Story of San Francisco's Water,* Accessed July 31, 2018, at https://sfwater.org/modules/showdocument.aspx?documentid=84.

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CHAPTER 7
Report Preparers

7.A San Francisco Planning Department

Environmental Planning Division
1650 Mission Street, Suite 400
San Francisco, CA 94103

- Environmental Review Officer: Lisa Gibson
- Principal Planner: Wade Wietgrefe
- Senior Environmental Planner: Jeanie Poling
- Environmental Planner: Jennifer McKellar
- Transportation Planner: Elizabeth White
- Air Quality: Josh Pollak
- Noise: Chris Thomas

7.B Office of the City Attorney

City Hall, Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

- Deputy City Attorney: Robb Kapla

7.C Environmental Consultants

Environmental Science Associates (ESA) (Prime Environmental Consultant)
550 Kearny Street, Suite 800
San Francisco, CA 94108

- Susan Yogi, Project Manager
- Karl Heisler, Senior Technical Advisor
- Terri Avila, Principal-in-Charge
- Jill Feyk-Miney, Deputy Project Manager
- Brian Schuster
- Blake Barroso
- Chris Sanchez
- Karen Lancelle
- Shadde Rosenblum
- Ron Teitel
- James Songco
- Joel Miller

Kittelson & Associates Inc. (Transportation)
155 Grand Avenue, Suite 900
Oakland, CA 94612

- Tim Erney
- Amanda Leahy

7.D Project Sponsor/Architect

Reservoir Community Partners LLC
600 California Street, Suite 900
San Francisco, CA 94108

- Joe Kirchofer
- Joel Roos
- Kearstin Dischinger
- Nora Collins

Van Meter Williams Pollack LLP
333 Bryant Street, Suite 300
San Francisco, CA 94107

- Karen Murray

Farella Braun + Martel LLP
Russ Building
235 Montgomery Street
San Francisco, CA 94104

- Steve Vettel
- C.J. Higley

7.E Partial List of Organizations and Persons Consulted

San Francisco Municipal Transportation Agency

- Carli Paine, Land Use Development and Transportation Integration, Sustainable Streets Division
- Mari Hunter, Curb Management
- Scott Jefferis, Transit Service Planning
- Jessica Garcia, Transit Service Planning
- James Shahamiri, Transportation Engineering
- Tony Henderson, Transit Engineering
- Mike Sallaberry, Livable Streets

San Francisco Public Utilities Commission

- Molly Petrick, Water Resources Division
- Fan Lau, Water Resources Division
- Lawrence Truong, Environmental Project Manager

San Francisco Recreation and Park Department

- Stacy Bradley, Deputy Director of Planning, Capital and Planning Division
- Yael Golan, Planner, Capital and Planning Division

San Francisco Department of Public Health

- Joseph Ossai, Senior Environmental Health Inspector, Environmental Health – Site Mitigation Program

San Francisco Fire Department

- Captain Mike Patt

San Francisco Office of Economic and Workforce Development

- Leigh Lutenski, Project Manager, Joint Development

City College of San Francisco

- Rueben Smith, Interim Vice Chancellor of Facilities, Planning, and Construction

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Jeanie Poling, Senior Environmental Planner
San Francisco Planning Department
Environmental Planning Division
1650 Mission Street, Suite 400
San Francisco, CA 94103

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Balboa Reservoir Project, Planning Department Case No. 2018-007883ENV

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