

DRAFT ENVIRONMENTAL IMPACT REPORT - Volume 1

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR

PLANNING DEPARTMENT
CASE NO. 2013.0208E

STATE CLEARINGHOUSE NO. 2013122024

	Draft EIR Publication Date:	April 26, 2017
	Draft EIR Public Hearing Date:	June 1, 2017
	Draft EIR Public Comment Period:	April 26, 2017 through June 12, 2017

SAN FRANCISCO PLANNING DEPARTMENT

Written comments should be sent to:
Tania Sheyner, AICP, LEED AP | 1650 Mission Street, Suite 400 | San Francisco, CA 94103 or tania.sheyner@sfgov.org

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List of Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ALS	Advanced Life Support
AMI	area median income
APEZ	Air Pollutant Exposure Zone
AWSS	Auxiliary Water Supply System
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan
Bay	San Francisco Bay
Bay Area	San Francisco Bay Area
Bay Plan	San Francisco Bay Plan
BCDC	Bay Conservation and Development Commission
BLIP	Branch Library Improvement Program
BMPs	best management practices
BRWL	blue-rich white light lamps
C&D	Construction and demolition
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Division of Occupational Safety and Health
CalEMA	California Emergency Management Agency
CALGreen Code	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CBIA v. BAAQMD	California Building Industry Association vs. Bay Area Air Quality Management District
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane

CII	Commercial, Industrial, and Institutional
CIP	capital improvement program
City	City and County of San Francisco
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide-equivalent" measures
CPUC	California Public Utilities Commission
CWA	Clean Water Act
DDT	dichlorodiphenyltrichloroethane
Delta	Sacramento River–San Joaquin River Delta
Design Controls	Development Controls and Design Guidelines
DHS	Department of Health Services
DO	dissolved oxygen
DOE	Department of Energy
DPR	California Department of Parks and Recreation
DPR	Department of Parks and Recreation
DPS	distinct population segment
Draft EIR	Draft Environmental Impact Report
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
East Bay	AC Transit
EE	environmental evaluation
EFH	essential fish habitat
Embarcadero Historic District	Port of San Francisco Embarcadero National Register Historic District
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERO	Environmental Review Officer
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
FARR	Final Archaeological Resources Report
FEMA	Federal Emergency Management Agency

FHWG	Fisheries Hydroacoustic Working Group
FIRM	Flood Insurance Rate Map
General Plan	City and County of San Francisco General Plan
GHG	greenhouse gas
GPCD	gallons of water consumed per person per day
gsf	gross square feet
H&H	H&H Shipping Service Company, Inc.
HCD	Housing and Community Development
HDMT	Healthy Development Measurement Tool
HRE	Historic Resource Evaluation, Seawall Lot 337 and Pier 48 Mixed-Use Development Project, San Francisco, California
HZ	Height Zone
I-280	Interstate 280
I-80	Interstate 80
IBC	International Building Code
IESNA	Illuminating Engineering Society of North American
ILA	International Longshoremen's Association
kV	kilovolt
LED	light-emitting diode
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LUST	leaking underground storage tank
Ma	million years
MAA	Management Agency Agreement
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MARAD	U.S. Department of Transportation Marine Administration
MB-OS	Mission Bay Open Space
MB-OS	Mission Bay, Open Space
MBBTCC	Mission Bay Ballpark Transportation Coordination Committee
MBD	Mission Bay Datum
MB-RA	Mission Bay Redevelopment Area
MBTA	Migratory Bird Treaty Act
MCLs	maximum contaminant levels

MERV	Minimum Efficiency Reporting Value
mg/l	milligrams per liter
MHE	maximum historic earthquake
MHW	mean high water
million $MTCO_2e$	million gross metric tons of CO_2e
MIR	maximally impacted receptor
MMPA	Marine Mammal Protection Act
MPN/100 mL	most probable number per 100 milliliters
MS4	Municipal Separate Storm Sewer Systems
MSW	municipal solid waste
MT/yr	metric tons per year
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
Mw	moment magnitude
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Act
NFPA	National Fire Protection Agency
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOP	notice of preparation
North Bay	Golden Gate Transit
NPDES	National Pollutant Discharge Elimination System
NPRA	National Parks and Recreation Association
NRC Report	Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future
NRC	National Research Council
NTUs	nephelometric turbidity units
O&M	operation and maintenance

OCII	Office of Community Investment and Infrastructure
OHP	California Office of Historic Preservation
OSP	Oceanside Water Pollution Control Plant
PAR	Environmental Planning Preliminary Archaeological Review: Checklist for the Mission Rock Pier 48 and Seawall Lot 337 Project
PCBs	polychlorinated biphenyls
PDA	Port of San Francisco Priority Development Area
Peninsula	San Francisco Peninsula
PG&E	Pacific Gas & Electric
Planning Code	San Francisco Planning Code
Port	Port of San Francisco
Port Historic Guidelines	Port of San Francisco Historic Preservation Review Guidelines for Pier and Bulkhead Wharf Substructures
PPD	per person per day
PRC	Public Resources Code
Project	Seawall Lot 337/Pier 48 Mixed-Use Project
Regional Water Board	Regional Water Quality Control Board
RHA	Rivers and Harbors Act
RHNA	Regional Housing Needs Allocation
RPD	Recreation and Parks Department
RTP	Regional Transportation Plan
RWD	Report of Waste Discharge
RWS	Regional Water System
SB	Senate Bill
SB 610	California Senate Bill 610
SBx7-7	Senate Bill x7-7
SCS	Sustainable Communities Strategy
SDPS	Storm Drain Pump Station
SDWA	Safe Drinking Water Act
Seaport Plan	San Francisco Bay Area Seaport Plan
Secretary's Standards	Secretary of the Interior's Standards for the Treatment of Historic Properties
SEL	sound exposure level

SF&SJ	San Francisco & San Joaquin
SFDPH	San Francisco Department of Public Health
SFEI	San Francisco Estuary Institute
SFFD	San Francisco Fire Department
SFHAs	Special Flood Hazard Areas
SFMTA	San Francisco Municipal Transportation Agency
SFO	San Francisco International Airport
SFPD	San Francisco Police Department's
SFPL	San Francisco Public Library
SFPUC	San Francisco Public Utilities Commission
SFPW	San Francisco Public Works
SFUSD	San Francisco Unified School District
SHPO	State Historic Preservation Officer
SLR	sea-level rise
SMCLs	secondary maximum contaminant levels
SOMA	South of Market
SP	service population
SPCC	Spill Response and Countermeasure Plan
SR	State Route
SSIP	Sewer System Improvement Program
SUD	Special Use District
SVP	Society of Vertebrate Paleontology
SWMP	Stormwater Management Plans
SWPPP	Stormwater Pollution Prevention Plan
SWPS	Stormwater Pump Station
SWRCB	State Water Resources Control Board
TDM	Transportation Demand Management
TDMP	Transportation Demand Management Program
TIDF	Transit Impact Development Fee
TMDL	total maximum daily load
TNW	traditional navigable water
TSF	Transportation Sustainability Fee
Tvis	visible light transmittance

UCSF	University of California San Francisco
US 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGBC	U.S. Green Building Council
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
VegCAMP	Vegetation Classification and Mapping Program
VOCs	volatile organic compounds
WDRs	Waste Discharge Requirements
Westar	Westar Marine Services
WLUP	Waterfront Land Use Plan
WSA	Water Supply Assessment
µg/l	micrograms per liter

SUMMARY

S.1 INTRODUCTION

This document is a Draft Environmental Impact Report (EIR) for the proposed Seawall Lot 337 and Pier 48 Mixed-Use Project, known herein as the Mission Rock Project (or proposed project). This chapter of the EIR provides a summary of the proposed project, a summary of the anticipated environmental impacts of the proposed project and the identified mitigation measures, areas of controversy to be resolved, a summary of alternatives to the proposed project, and an identification of the environmentally superior alternative. The project sponsor, Seawall Lot 337 Associates, LLC, proposes to develop residential, commercial, production, active/retail, and parking uses on 11 proposed development blocks on Seawall Lot 337 and rehabilitate and reuse approximately 261,000 gross square feet (gsf) of Pier 48 in downtown San Francisco.

S.2 PROJECT SUMMARY

The Mission Rock Project entails development of a mixed-use, multi-phase project at Seawall Lot 337, rehabilitation and reuse of Pier 48, and construction of approximately 5.4 acres of net new open spaces for a total of approximately 8 acres of open space on the project site. The proposed project would include 2.7 to 2.8 million gsf of mixed uses on 11 proposed development blocks, with building heights ranging from 90 feet (approximately seven stories) to a maximum of 240 feet (approximately 23 stories). The mixed-use development would comprise approximately 1.1 to 1.6 million gsf of residential uses (estimated at 1,000 to 1,600 units, consisting of both market-rate and affordable housing), approximately 972,000 to 1.4 million gsf of commercial uses, and 241,000 to 244,800 gsf of active/retail uses on the lower floors of each block. Additionally, the project would include approximately 1.1 million gsf of aboveground and underground parking (approximately 3,100 parking spaces) and rehabilitation of 242,500 gsf of industrial, restaurant, active/retail, tour, exhibition, and meeting space within Pier 48 for reuse by an industrial use, specifically analyzed as a proposed brewery.

The project site is located in the Mission Bay neighborhood of the city, adjacent to the Mission Bay South Redevelopment Area. The 27-acre project site consists of Assessor's Block 8719/Lot 002, Block 8719/Lot 006, and Block 9900/Lot 048, which includes several areas: the 13.6-acre Seawall Lot 337; the 0.3-acre strip of land on the south side of Seawall Lot 337, referred to as Parcel P20; the 6.0-acre Pier 48; the existing 2.6-acre China Basin Park; and 4.6 acres of streets and access areas within or adjacent to the boundaries of Seawall Lot 337 and Pier 48. Most of the project site is currently paved, with Seawall Lot 337 and portions of Parcel P20 used mainly as a

surface parking lot; the Pier 48 structure is used for indoor parking, storage, and warehouse uses. Seawall Lot 337 and Pier 48 are also used for special events, which are held up to 50 days per year, with a total of approximately 200,000 to 250,000 guests annually.

S.3 SUMMARY OF IMPACTS AND MITIGATION MEASURES

The Planning Department published a Notice of Preparation (NOP) on December 11, 2013, announcing its intent to prepare and distribute an EIR. In June 2014, subsequent to the publication of the NOP, the City's voters approved Proposition B (Voter Approval for Waterfront Development Height Increases), which states that voter approval is required for any height increases on property, such as the project site, within the jurisdiction of the Port of San Francisco. Accordingly, on November 3, 2015, the City voters approved Proposition D (the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative), which amended the height and bulk restrictions for the project site by establishing the Mission Rock Height and Bulk District. Under Proposition D, the proposed heights for buildings on some of the proposed development blocks are lower than originally contemplated in the NOP, and there have been no increases in the height, density or intensity of development for the proposed project since publication of the NOP.

Topics analyzed in the EIR are land use and land use planning, aesthetics, population and housing, cultural resources, transportation and circulation, noise, air quality, greenhouse gas (GHG) emissions, wind and shadow, public services and recreation, utilities and service systems, biological resources, geology and soils, hydrology and water quality, and hazards/hazardous materials.

This summary provides an overview of the analysis contained in Chapter 4, *Environmental Setting and Impacts*. Impacts are categorized by type of impact, as follows:

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

- **Significant and Unavoidable**. An adverse physical environmental impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations. There are no feasible mitigation measures.

SENATE BILL 743

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, which became effective on January 1, 2014, and added Section 21099 to the California Public Resources Code. Among other provisions, Public Resources Code Section 21099(d)(1) changed the typical analysis of aesthetics and parking impacts for urban infill projects under the California Environmental Quality Act (CEQA). The proposed project meets most of the criteria associated with SB 743 (e.g., it is an infill site located within a transit priority area). SB 743 directs that aesthetic and parking impacts of residential, mixed-use residential, or employment center infill projects located in transit priority areas are not considered significant impacts on the environment under CEQA. However, the project may not fully meet the criteria for being considered a mixed-use project because mixed-use projects typically include residential, commercial, and some industrial uses but not heavy industrial uses. Because the proposed project would include an industrial use (i.e., the proposed industrial use, specifically analyzed as a brewery on Pier 48), it may not fit within the generally accepted classification of a mixed-use residential development. Although the majority of the proposed project would include residential and commercial uses, with the heavy industrial use constituting an estimated 10 percent of the approximately 2.5 million gsf of proposed development, this EIR nevertheless applies a conservative interpretation of SB 743; thus, an analysis of the proposed project's impacts on aesthetics is provided in Section 4.B; an analysis of the project's impacts related to parking is provided in Section 4.E, *Transportation and Circulation*.

SIGNIFICANT AND UNAVOIDABLE IMPACTS

All impacts of the proposed project, its alternatives, and the associated mitigation measures and improvement measures identified in this EIR are summarized in Table S.1, page S-11. The impacts are listed in the same order as they appear in the text of Chapter 4, *Environmental Setting and Impacts*, of this EIR. The proposed project would result in the following significant and unavoidable impacts (including impacts that are significant and unavoidable with mitigation):

TRANSPORTATION IMPACTS

- The proposed project would result in an adverse impact by increasing ridership by more than 5 percent on two individual Muni routes that exceed 85 percent capacity utilization under baseline conditions. (Impact TR-4)

- The proposed project would result in an adverse impact related to a substantial increase in transit delays on Third Street between Channel Street and Mission Rock Street. (Impact TR-6)
- The proposed project would have significant impacts on pedestrian safety at the unsignalized intersections of Fourth Street/Mission Rock Street and Fourth Street/Long Bridge Street. (Impact TR-9)
- The proposed project would contribute considerably to a significant cumulative transit impact because it would increase ridership by more than 5 percent on one individual Muni route that would exceed 85 percent capacity utilization. (Impact C-TR-4)
- The proposed project would contribute considerably to significant cumulative impacts related to transit delay. (Impact C-TR-6)
- The proposed project would contribute considerably to significant cumulative pedestrian impacts. (Impact C-TR-7)

NOISE IMPACTS

- Construction of the proposed project would generate noise levels in excess of standards or result in substantial temporary increases in ambient noise levels. (Impact NOI-1)
- Operation of the proposed project could result in the exposure of persons to or generation of noise levels in excess of the San Francisco Noise Ordinance or a substantial permanent, temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project. (Impact NOI-2)
- Construction of the project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to annoyance. (Impact NOI-3)
- Construction activities for the proposed project, in combination with other past, present, and reasonable future projects in the city, would result in a substantial temporary increase in noise or noise levels in excess of the applicable local standards. (Impact C-NOI-1)
- Construction activities associated with project-related development, in combination with other past, present, and reasonable future projects in the city, would expose sensitive receptors to excessive ground-borne vibration related to annoyance. (Impact C-NOI-2)
- Operation of the proposed project, in combination with other past, present, and reasonable future projects in the city, could result in the exposure of persons to noise in excess of the applicable local standards or a substantial permanent ambient noise level increase in the project vicinity. (Impact C-NOI-3)

AIR QUALITY IMPACTS

- Construction of the proposed project would generate fugitive dust and criteria air pollutants, which for criteria air pollutants but not fugitive dust, 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. (Impact AQ-1)
- During project operations, the proposed project would result in emissions of criteria air pollutants 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. (Impact AQ-2)
- During combined project construction and operations, the proposed project would result in emissions of criteria air pollutants 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. (Impact AQ-3)
- The proposed project's construction and operation, in combination with other past, present, and reasonable future projects, would contribute to cumulative regional air quality impacts. (Impact C-AQ-1)

WIND IMPACTS

- The proposed project would alter wind in a manner that would substantially affect public areas. (Impact WS-1)
- The proposed project, in combination with past, present, and reasonably foreseeable future projects, would alter wind in a manner that would substantially affect public areas. (Impact C-WS-1)

S.4 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

As noted above, the Planning Department published a NOP on December 11, 2013, to notify the public of its intent to prepare and distribute an EIR for the Mission Rock Project. During the public scoping process and at the public scoping meeting (held on January 13, 2014), the Planning Department received numerous comments from public agencies, organizations, and individuals regarding the scope and content of the EIR, including comments on the design of the proposed project and its environmental effects.

Comments received during the scoping process on the proposed project and its environmental effects are addressed in this EIR. This section lists the areas of controversy and major concerns raised during the scoping period as well as issues to be resolved. These include the following:

- Consistency of the proposed project with the Mission Bay Plan, San Francisco Waterfront Plan, and Mission Bay development guidelines (Chapter 3, *Plans and Policies*).
- Potential impacts along specific viewpoints, the waterfront, and in surrounding areas. The scale of the proposed project, height of the project, and the future use of Parcel P20 (Section 4.B, *Aesthetics*).
- Provision of affordable housing and population density (Section 4.C, *Population and Housing*).
- Potential impacts on submerged cultural resources in the project area (Section 4.D, *Cultural Resources*).
- Increases in traffic and traffic congestion, connections to the city's transportation network, lack of public transportation in the area, pedestrian safety, traffic during game days, fair-share contributions, and impacts of increased traffic on emergency vehicle delay (Section 4.E, *Transportation and Circulation*).
- Potential noise impacts from additional residents (Section 4.F, *Noise*).
- Potential GHG impacts, mitigation measures, and inclusion of a GHG emissions analysis consistent with Assembly Bill 32, the California Global Warming Solutions Act (Section 4.H, *Greenhouse Gas Emissions*).
- Potential shadow impacts along the waterfront and in China Basin Park and Mission Rock Square (Section 4.I, *Wind and Shadow*).
- Potential loss of green space, and preservation of public lands for public and recreational use (Section 4.J, *Public Services and Recreation*).
- Adequacy of water and sewer systems with the addition of the proposed project and the Water Supply Assessment (Section 4.K, *Utilities and Service Systems*).
- Potential impacts on the marine environment, as well as state- and federally listed species, and pile-driving impacts on fish, birds, and mammals (Section 4.L, *Biological Resources*).

The issues listed above are discussed in this EIR.

S.5 SUMMARY OF VARIANTS

The project sponsor (Seawall Lot 337 Associates, LLC) has requested that this Draft EIR include an environmental analysis of variants to the proposed project. 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 – District Energy/Bay-Source Heating and Cooling, which would provide a district-wide heating and cooling system, with hot and cold water piped underground to individual buildings in lieu of chillers and boilers in each building.
- Variant 2 – Entertainment Venue, which would accommodate up to 4,000 patrons and up to 50 events per year in one of the proposed project buildings.
- Variant 3 – Reconfigured Parking, which would relocate 700 parking spaces from the subterranean garage at Mission Rock Square, which would not be constructed under this variant, to the Block D2 garage.
- Variant 4 – Hotel Use, which would provide a hotel with approximately 200,000 gsf in a building that otherwise would have been residential.

S.6 SUMMARY OF ALTERNATIVES

In addition to the proposed project, this Draft EIR analyzes the environmental impacts of three alternatives that were determined to represent a reasonable range of alternatives, as follows:

- **No Project Alternative (Alternative A)**: The project site would remain in its current condition, and no new development or redevelopment of existing uses would occur. Seawall Lot 337 would continue to operate as a surface parking lot and an area for pop-up retail; it would not be developed. No physical or operational changes would be made to the existing sheds, aprons, or the valley on Pier 48; seismic upgrades to the pier structure would not be implemented. China Basin Park would remain as a 3.3-acre park, and no other open space would be added to the project site.
- **Reduced Intensity Alternative (Alternative B)**: Mission Rock Square and the Mission Rock Square Garage would not be constructed. In their place, a building (Building K) would be constructed in the middle of Seawall Lot 337. The area where Building K would be located under the proposed project would be an extension of China Basin Park under this alternative. The removal of Mission Rock Square would result in a slight decrease in open space (approximately 0.48 acre less than the proposed project), which would be compensated for by provision of an equivalent amount of open space (or more) on rooftops on the buildings on Blocks E and/or K or a combination thereof. Building heights adjacent to China Basin Park would be reduced. In addition, the Reduced Intensity Alternative would not include flexible parcels on Blocks H, I, and J. Instead, Block H would be commercial, while Blocks I and J would be residential. The D1 residential tower would be relocated to the east side of Block D and the D2 garage.

The D2 garage (and its driveways) would be shifted to the west. Active retail use would be maintained on the Block D frontage on Third Street. All proposed changes to Pier 48 would remain the same. In total, the Reduced Intensity Alternative would result in 240,000 to 340,000 gsf less at Seawall Lot 337 compared with the proposed project. This alternative was selected because of its potential to reduce construction-related noise, air quality, shadow, and transportation impacts.

- **No Change to Pier 48 Alternative (Alternative C)**: No rehabilitation or reuse would occur on Pier 48; Pier 48 would remain in its existing condition, except that the Pier 48 aprons would continue to be designated for public access and open space, consistent with the proposed project plan. Development on the remaining portions of the project site, including Seawall Lot 337, Parcel P20, China Basin Park, Channel Wharf, and Terry A. Francois Boulevard, would occur as proposed under the proposed project. This alternative was selected because of its potential to reduce traffic, loading, and pedestrian/bicycle conflicts as well as noise and biological impacts (no in-water construction or pile driving). Eliminating the reuse and rehabilitation of Pier 48 could avoid or reduce various impacts without changing the proposal for Seawall Lot 337.

Section 21002 of the State CEQA Guidelines requires lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. CEQA also requires that an environmentally superior alternative be identified among the alternatives analyzed. In general, the environmentally superior alternative is the project that avoids or substantially lessens some or all of the significant and unavoidable impacts of the proposed project (CEQA Guidelines Section 15126.6). Table S-2, page S-65, compares the significant impacts of the proposed project, the No Project Alternative, the Reduced Intensity Alternative, and the No Change to Pier 48 Alternative. The table compares the significance of impacts in two ways. One, for each impact studied, it identifies the level of impact for the project and each alternative (e.g., no impact, less-than-significant impact, less-than-significant impact with mitigation, significant and unavoidable impact, or significant and unavoidable impact with mitigation). Two, for each alternative, it indicates whether the degree of impact would be equal to, less than, or greater than that of the project impact. In some cases, although both the project and alternative would result in the same level of impact, the degree of impact with the alternative might be less than or greater than that of the project.

S.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The EIR is required to identify the environmentally superior alternative (i.e., the alternative that has the fewest significant environmental impacts) from among the other alternatives evaluated. The proposed project would result in significant and unavoidable impacts related to

transportation, noise, air quality, and wind. On the basis of comparing the extent to which the alternatives reduce or avoid the significant impacts of the proposed project, the No Project Alternative would be the environmentally superior alternative because it would result in no impacts on resources. However, if the No Project Alternative is the environmentally superior alternative, then the EIR must also specify which of the other alternatives (including the proposed project) would be environmentally superior.

Both the Reduced Intensity Alternative and the No Change to Pier 48 Alternative would result in less overall gross square footage of development compared to the proposed project. Under the Reduced Intensity Alternative, in addition to less development, building heights would decrease at some locations, and the underground Mission Rock Square Garage would not be constructed. Building K would be moved from next to China Basin Park to the Mission Rock Square site. Because some building heights would decrease and the location of the tower on Block D would be shifted, the significant and unavoidable wind impacts would be reduced slightly, but impacts would remain significant and unavoidable, even with mitigation. In addition, reducing the total square footage of development and eliminating the underground parking garage would slightly decrease overall impacts related to land use, aesthetics, population/housing, cultural resources, transportation, GHG emissions, shadow, public services, utilities, geology, hydrology and water quality, and hazards and hazardous materials. Although these impacts would be lower in degree under this alternative, the Reduced Intensity Alternative would not decrease any significant and unavoidable impacts or reduce impacts to a less-than-significant level that would otherwise require mitigation.

The No Change to Pier 48 Alternative would not develop Pier 48, which would result in a slight reduction in impacts related to land use, aesthetics, population/housing, cultural resources, transportation, air quality, GHG emissions, public services, utilities, geology, hydrology and water quality, and hazards and hazardous materials. However, this alternative would reduce all of the impacts on fish and marine mammal species from pile driving at Pier 48 during the seismic upgrades. The proposed project would require mitigation measures related to biological resources to reduce project and cumulative impacts to less-than-significant levels. However, because no in-water pile driving would be required under the No Change to Pier 48 Alternative, no impacts would occur, and no mitigation measures would be needed.

Overall, the No Change to Pier 48 Alternative is considered the environmentally superior alternative because it would reduce the severity of adverse environmental effects across a broad range of environmental resources, eliminate impacts on fish and marine mammal species related to pile driving at Pier 48, and not result in any new significant environmental impacts.

S.8 SUMMARY TABLES

Table S-1, on the following page, includes the impacts and mitigation measures identified in the EIR for the proposed project; Table S-2, page S-65, includes a comparison of the significant impacts of the proposed project to the impacts of the alternatives. It also determines if the sponsor's objectives would be met by the proposed project and the alternatives.

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

TABLE S-1. SUMMARY OF IMPACTS OF PROPOSED PROJECT

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Land Use and Land Use Planning			
Impact LU-1. The proposed project would not physically divide an established community.	LTS	None required.	NA
Impact LU-2. The proposed project would not conflict with 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	None required.	NA
Impact C-LU-1. The proposed project, in combination with other development within the city, would not physically divide an established community.	LTS	None required.	NA
Impact C-LU-2. The proposed project, in combination with other development within the city, would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	None required.	NA
Aesthetics			
Impact AE-1. The proposed project would not have a substantial adverse effect on a scenic vista.	LTS	None required.	NA
Impact AE-2. The proposed project would not have a substantial adverse effect on a scenic resource.	LTS	None required.	NA
Impact AE-3. The proposed project would not have a substantial adverse effect on the visual character or quality of the site and its surroundings.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact AE-4. The proposed project would not create a substantial adverse effect on light and glare.	LTS	None required.	NA
Impact C-AE-1. The proposed project, in combination with other foreseeable development in the surrounding area, would not have a significant cumulative impact on visual character or the quality of scenic vistas or public view corridors and would not cumulatively contribute to new sources of light, glare, or shadows.	LTS	None required.	NA
Population and Housing			
Impact PH-1. The proposed project would not result in substantial population growth in an area, either directly or indirectly.	LTS	None required.	NA
Impact C-PH-1. The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not induce substantial population growth either directly or indirectly or create substantial demand for additional housing, necessitating the construction of replacement housing.	LTS	None required.	NA
Cultural Resources			
Impact CP-1. The proposed project, including rehabilitation and reuse of the existing historic Pier 48 structures, in accordance with applicable Secretary of the Interior's Rehabilitation Standards, as well as new construction on Seawall Lot 337, would not have a substantial adverse effect on a historical or potential historical resource.	LTS	None required.	NA
Impact CP-2. The proposed project could cause a substantial adverse change in the significance of an archeological resource.	S	**M-CP-2: Archeological Testing**. Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL) maintained by the Planning Department archeologist. The project sponsor shall contact the Planning Department archeologist to obtain the names and contact information for the	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		next three archeological consultants on the QACL. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (ERO). All plans and reports prepared by the consultant, as specified herein, shall be submitted first and directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of 4 weeks. At the direction of the ERO, the suspension of construction can be extended beyond 4 weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level of potential effects on a significant archeological resource, as defined in CEQA Guidelines, Sections 15064.5 (a) and (c). *Consultation with Descendant Communities*: On discovery of an archeological site[1] associated with descendant Native Americans, the overseas Chinese, or other potentially interested descendant group, an appropriate representative[2] of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and offer recommendations to the ERO regarding appropriate archeological treatment of the site, recovered data from the site, and, if applicable, interpretative treatment of the associated archeological site. A copy of the final archeological resources report shall be provided to the representative of the descendant group. *Archeological Testing Program*. The archeological consultant shall prepare and submit to the ERO for review and approval an archeological testing plan (ATP). The archeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archeological resource(s) that could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for	

[1] The term "archeological site" is intended here to include any archeological deposit, feature, burial, or evidence of burial.

[2] An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American contact list for the City and County of San Francisco maintained by the NAHC or, in the case of overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the department archeologist.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		testing. The purpose of the archeological testing program will be to determine, to the extent possible, the presence or absence of archeological resources and identify and evaluate whether any archeological resource encountered on the site constitutes a historical resource under CEQA. At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. If, based on the archeological testing program, the archeological consultant finds that significant archeological resources may be present, the ERO, in consultation with the archeological consultant, shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. No archeological data recovery shall be undertaken without the prior approval of the ERO or the Planning Department archeologist. If the ERO determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor: A. The proposed project shall be redesigned so as to avoid any adverse effect on the significant archeological resource, or B. A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. *Archeological Monitoring Program*. If the ERO, in consultation with the archeological consultant, determines that an archeological monitoring program shall be implemented, the archeological monitoring program shall include the following provisions: • The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the archeological monitoring program reasonably prior to any project-related soil-disturbing activities commencing. The ERO, in consultation with the archeological consultant, shall determine what project activities shall be archeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utility installation, foundation work, pile driving (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the risk these activities pose to potential archeological resources and their depositional context; • The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), know how to identify evidence of the expected resource(s), and know the appropriate protocol in the event of apparent discovery of an archeological resource;	

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

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		The scope of the ADRP shall include the following elements: • *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations. • *Cataloging and Laboratory Analysis*. Description of selected cataloging system and artifact analysis procedures. • *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies. • *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archeological data recovery program. • *Security Measures*. Recommended security measures to protect the archeological resource from vandalism, looting, and nonintentionally damaging activities. • *Final Report*. Description of proposed report format and distribution of results. • *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. *Final Archeological Resources Report*. The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/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. 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, the ERO shall receive a copy of the transmittal of the FARR to the NWIC, and the Environmental Planning division of the Planning Department shall receive one bound, one unbound, 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 in or high interpretive value of the resource, the ERO may require a final report content, format, and distribution different from that presented above.	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact CP-3. The proposed project could disturb human remains, including those interred outside of formal cemeteries.	S	**M-CP-3: Treatment of Human Remains or Unassociated Funerary Objects.** The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws. This shall include immediate notification of the coroner of the City and County of San Francisco and, in the event of the coroner's determination that the human remains are Native American remains, notification of the Native American Heritage Commission (NAHC), which shall appoint a Most Likely Descendant (MLD) (PRC Section 5097.98). The archeological consultant, project sponsor, ERO, and MLD shall have up to but not beyond 6 days after the discovery to make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines. Section 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects, as specified in the treatment agreement, if such an agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.	LTS
Impact CP-4. The proposed project could result in a substantial adverse change in the significance of a tribal cultural resource.	S	**M-CP-4: Tribal Cultural Resources Interpretive Program.** If the 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 (TCR) 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 Environmental Review Officer (ERO) determines that preservation-in-place of the tribal cultural resource (TCR) pursuant to Mitigation Measure M-CP-2, Archeological Testing, 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 Environmental Review Officer (ERO), if 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	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		option, the project sponsor shall implement an interpretive program of the TCR 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.	
Impact C-CP-1. The proposed project, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on historic resources. However, the proposed project's contribution would not be cumulatively considerable.	LTS	None required.	NA
Impact C-CP-2. The proposed project, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on archeological resources, tribal cultural resources, and human remains. However, the project's contribution would be less than cumulatively considerable.	S	Implement **M-CP-2: Archeological Testing, M-CP-3: Treatment of Human Remains or Unassociated Funerary Objects, and M-CP-4: Tribal Cultural Resources Interpretive Program.**	LTS
Transportation and Circulation			
Impact TR-1. Construction of the proposed project would not result in significant impacts on the transportation and circulation network.	LTS	**I-TR-1: Construction Management Plan.** Traffic Control Plan for Construction – To reduce potential conflicts between construction activities and pedestrians, bicyclists, transit and autos during construction activities, the project sponsor should require construction contractor(s) to prepare a traffic control plan for major phases of construction (e.g. demolition and grading, construction, or renovation of individual buildings). The project sponsor and their construction contractor(s) should meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction. This includes coordinating project construction activities with nearby	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		City construction projects, such as the Third Street Rehabilitation Project. For any work within the public right-of-way, the contractor would be required to comply with the San Francisco's Regulations for Working in San Francisco Streets, which establishes rules and permit requirements so that construction activities can be conducted safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. Additionally, restrict truck movements and deliveries to the maximum feasible extent during peak hours (generally 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or other times, as determined by SFMTA and the TASC). In the event that the construction timeframes of the major phases and other development projects adjacent to the project site overlap, the project sponsor should coordinate with City agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. The project sponsor, in conjunction with the adjacent developer(s), should propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as coordinated material drop-offs, collective worker parking and transit to job site and other measures. Reduce Single-Occupant Vehicle Mode Share for Construction Workers – To minimize parking demand and vehicle trips associated with construction workers, the project sponsor should require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the project construction sites by construction workers in the coordinated plan. Project Construction Updates for Adjacent Residents and Businesses – To minimize construction impacts on access for nearby residences, institutions, and businesses, the project sponsor should provide nearby residences and adjacent businesses with regularly updated information regarding construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.	
Impact TR-2. The proposed project would not cause substantial additional VMT nor substantially induce automobile travel.	LTS	None required.	NA
Impact TR-3. The proposed project would result in queues that would create traffic hazards.	S	**M-TR-3: Parking Garage and Intersection Queue Impacts.** The easternmost driveway on Long Bridge Street (i.e., closest to Bridgeview Street) shall be restricted to right-in, right-out access during all times. Restricted access could be accomplished by placing signage as well as delineators of a sufficient length in the middle of Long Bridge Street to block left-turn access to the driveway.	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact TR-4. The proposed project would result in an adverse impact by increasing ridership by more than 5 percent on two individual Muni routes that exceed 85 percent capacity utilization under baseline conditions.	S	**M-TR-4.1: Provide Fair-Share Contribution to Improve 10 Townsend Line Capacity.** Upon completion and occupancy of Phase 1 of the proposed project and upon completion and occupancy of each subsequent phase as defined in the Development Agreement the project sponsor shall obtain from SFMTA the current ridership on the 10 Townsend and conduct an assessment of the capacity utilization at the screenline's Maximum Load Point (MLP) for weekday AM and PM peak hour conditions. If the capacity utilization exceeds 85 percent, a fair share contribution payment shall be made to SFMTA by the project sponsor, calculated as further provided in a Transit Mitigation Agreement described below, and attached to or incorporated into the Development Agreement. Such payment shall be adjusted, as appropriate, to the extent, if any, that the proposed project reflects either the High Residential Assumption or High Commercial Assumption based upon all phases of the proposed project that have been completed up to such date. Accordingly, the fair share contributions by phase may differ by scenario because the number of transit riders varies due to different mixes of land use. If the capacity utilization based on SFMTA's ridership data is less than 85 percent, then the project sponsor's fair share payment for that phase shall be $0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts. The project sponsor shall enter into a Transit Mitigation Agreement with the SFMTA pursuant to which the project sponsor will make a fair share contribution to the cost of providing additional bus service or otherwise improving service on the 10 Townsend. The fair share contribution as documented in the Transportation Impact Study for the proposed project shall not exceed the following amounts, in total across all phases: a. $991,230 for High Commercial Assumption b. $782,706 for High Residential Assumption SFMTA will determine whether adding bus(es) or other measures are more desirable to increase capacity along the route and will use the funds provided by the project sponsor to implement the most desirable measure, which may include but is not limited to the following measures: 1. Convert to using higher-capacity vehicles on the 10 Townsend route. In this case, the project sponsors fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		2. Instead of adding more buses to a congested route, increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements. 3. Increase capacity along the corridor by adding a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles **M-TR-4.2: Provide Fair-Share Contribution to Improve 30 Stockton Line Capacity Proposed Project.** Upon completion and occupancy of Phase 1 of the proposed project and upon completion and occupancy of each subsequent phase as defined in the Development Agreement, the project sponsor shall obtain from SFMTA the current ridership on the 30 Stockton and conduct an assessment of the capacity utilization at the Maximum Load Point (MLP) on the route between the proposed project and Market Street for weekday PM peak hour conditions. If the capacity utilization exceeds 85 percent, a fair share contribution payment shall be made by the project sponsor, calculated as further provided in Transit Mitigation Agreement described below, and attached to or incorporated into the Development Agreement. Such payment shall be adjusted, as appropriate, to the extent, if any, that the proposed project reflects either the High Commercial Assumption or the High Residential Assumption, the latter of which does not require any fair share contribution. The fair share contributions differ by scenario because the number of transit riders varies due to different mixes of land use. If the capacity utilization based on SFMTA's ridership data is less than 85 percent, then the project sponsor's fair share payment for that phase shall be $0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts. The project applicant shall enter into a Transit Mitigation Agreement with the SFMTA pursuant to which the project applicant will make a fair share contribution to the cost of providing additional bus service or otherwise improving service on the 30 Stockton. The fair share contribution as documented in the Transportation Impact Study for the proposed project shall not exceed the following amounts, in total across all phases:	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		a) $417,691 for High Commercial Assumption b. $0 for High Residential Assumption SFMTA will determine whether adding bus(es) or other measures are more desirable to increase capacity along the route and will use the funds provided by the project sponsor to implement the most desirable measure, which may include but is not limited to the following measures: 1. Convert to using higher-capacity vehicles on the 30 Stockton route. In this case, the project sponsors fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available. 2. Instead of adding more buses to a congested route, increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements. 3. Increase capacity along the corridor by adding a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles.	
Impact TR-5. The proposed project would not cause significant impacts on regional transit routes.	LTS	None required.	NA
Impact TR-6. The project would result in an adverse impact related to a substantial increase in transit delays on Third Street between Channel Street and Mission Rock Street.	S	**M-TR-6: Parking Garage and Intersection Queue Impacts on Transit Delay** A. The westernmost driveway on Mission Rock Street (i.e., closest to Third Street) shall be restricted to right-in, right-out access and closed during large AT&T Park events. Restricted access could be accomplished by placing signage as well as delineators of a sufficient length between the westbound through and left-turn lanes on Mission Rock Street to block left-turn access to the driveway. B. A "keep clear" zone shall be provided in front of the easternmost driveway on Mission Rock Street (i.e., closest to Bridgeview Street) to prevent westbound queues at the Third Street/Mission Rock traffic signal from blocking inbound access to the driveway.	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		C. The southbound left-turn lane at the Third Street/Mission Rock Street intersection shall be restriped to extend the length of the left-turn lane to 350 feet. Advance traffic signal detection equipment shall be installed at the end of the newly striped left-turn pocket to detect when queues fill up the left-turn pocket and extend north to the end of the pocket near the Third Street/Channel Street intersection, allowing additional green time to be allocated to the southbound left-turn movement at the Third Street/Mission Rock Street traffic signal. D. Wayfinding signs including Static and Variable Message Signs will be installed to provide directions to the parking garages and to provide traffic alerts, messages, and alternate driving routes for drivers traveling to the Block D2 aboveground garage, to destinations in the vicinity, or through the area. Four High Visibility Static Signs will be installed, three on the approaches to the Third Street/Mission Rock Street intersections (for southbound, eastbound and northbound directions) and one for northbound drivers on Terry A. Francois Boulevard, south of Mission Rock Street. One permanent Variable Message Sign shall be installed for southbound drivers on Third Street, between King Street and Berry Street. E. The project sponsor shall enter into an Event Mitigation Agreement with the SFMTA that provides for Parking Control Officers (PCOs) to manage traffic within the project site adjacent to the proposed project's parking garages and on Exposition Street (between Third Street and the Shared Public Way) during all AT&T Park events and on-site events with 15,000 or more attendees. F. The site's TDM coordinator shall be a member of the Mission Bay Ballpark Transportation Coordination Committee and provide notification prior to the start of any on-site event that would overlap with an event at AT&T Park or the Warriors arena. G. Traffic destined for the proposed project's parking garages will be monitored by the owner/operator during all AT&T Park events and on-site events with 15,000 or more attendees, and periodically during weekday a.m. and p.m. peak hours, to ensure that garage access queues do not affect operations of the T Third transit line. Action will be taken by the Mission Rock Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff, and/or PCOs assigned to event traffic management to implement real-time traffic management strategies (i.e., alternative traffic routing, temporal parking pricing, enhanced garage driveway controls, etc.) to reduce vehicle garage access queues so they do not affect operations of the T Third line.	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		H. If the SFMTA Director, or his or her designee, receives information that a recurring queue that could affect the operation of the T Third line is imminent or present, SFMTA shall notify the property owner in writing. Upon request, the owner/operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than 7 days. The consultant shall prepare a monitoring report to be submitted to SFMTA for review. If SFMTA determines that a recurring queue does exist, the facility owner/operator shall have 45 days from the date of the written determination to abate the excessive recurring queue. Approaches to queue abatement could include but are not limited to: changing parking access and revenue collection system (PARCS) technology to process vehicles more rapidly, adjusting the layout of the garage's ground floor to accommodate more queuing vehicles within the garage, implementing peak-period surge pricing to encourage garage access and egress outside of times with recurrent excessive queues; installing additional variable message signage further upstream from the site to direct drivers to garage access routes away from affected intersections; and/or closing, limiting or controlling Mission Rock Street access from Third Street during times with excessive recurrent queuing and redirecting garage-bound traffic to Terry A. Francois Boulevard.	
Impact TR-7. The proposed project would have a substantial adverse effect on pedestrian travel by creating potentially hazardous conditions for pedestrians adjacent to the Block D2 parking structure.	S	**Implement Mitigation Measure M-TR-3 and M-TR-6.** **I-TR-7: Garage Access – Pedestrian Design Features.** During the final design process for the parking facilities and the pedestrian realm of adjacent streets, improvements should be designed for the safe interface of vehicles and pedestrians at parking facility driveways. This design shall include adequate sight distance, signing, striping, warning devices, and lighting.	LTS
Impact TR-8. Existing pedestrian facilities on the Third Street Bridge, the Fourth Street Bridge, and the Fourth Street/King Street intersection are sized adequately to accommodate pedestrian traffic generated by the proposed project.	LTS	None required.	NA
Impact TR-9. The proposed project would have significant impacts on pedestrian safety at the unsignalized intersections of Fourth Street/Mission Rock Street and Fourth Street/Long Bridge Street.	S	**M-TR-9: Install Traffic Signals and Related Intersection Improvements at Unsignalized Intersections on Fourth Street at Mission Rock Street and Long Bridge Street.** Prior to issuance of approval of the third building site permit, but in no event later than the site permit for the Block D2 parking garage, the project sponsor shall provide funding to SFMTA, for a maximum amount of $1 million for SFMTA to design and construct (1) a traffic signal at the intersection of Fourth Street/Long Bridge Street and (2) a traffic signal at the intersection of Fourth Street/Mission Rock Street. These improvements should be constructed by SFMTA prior to opening of the Block D2 parking garage.	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact TR-10. The proposed project would create potentially hazardous conditions for bicyclists and would interfere with bicycle accessibility to the project site or adjoining areas.	S	**Implement Mitigation Measures M-TR-3 and M-TR-6.** **M-TR-10: Bicycle-Truck Interface at Pier 48.** The project shall construct a highly visible crossing treatment across the driveway as well as bollards and detectable warning pavers that satisfy ADA requirements at the Pier 48 driveway's beginning and end locations along the Blue Greenway path to warn cyclists and pedestrians of the upcoming driveway crossing. The project shall provide a traffic control staff at the junction of the Blue Greenway and the driveway to the Pier 48 valley during deliveries to manage bicycle and truck traffic. A flagger shall be provided to manage bicycle and pedestrian travel along the Blue Greenway at the Pier 48 valley driveway whenever trucks back into Pier 48. **I-TR-10: Garage Access – Bicycle-Vehicle Design Features.** During the final design process for Long Bridge Street, adequate sight distance should be provided through a combination of signing, striping, and lighting improvements, which should be designed for the safe interface of vehicles and cyclists at the two Block D2 parking facility driveways.	LTS
Impact TR-11. The proposed project's loading demand during the peak loading hour would not be adequately accommodated by the proposed onsite/off-street loading supply or in proposed on-street loading zones, which may create hazardous conditions or significant delays for transit, bicycles, or pedestrians.	S	**M-TR-11.1: Commercial Loading Supply – Monitor Loading Activity and Implement Additional Loading Management Strategies as Needed.** After completion (of the first phase of the proposed project and prior to approval of each subsequent phase, the project sponsor shall conduct a study of utilization of commercial loading spaces. The methodology for the study shall be reviewed and approved by the Planning Department prior to completion. If the result of the study indicates that fewer than 15 percent of the commercial loading spaces are available during the peak loading period, the project sponsor shall implement additional loading management strategies and/or provide additional or expanded off-street loading supply sufficient to meet the loading demand in subsequent phases of the project in either the garages or in off-street parking in individual buildings, consistent with the proposed project's design intent. Additional loading strategies could include (but are not limited to): expanding efforts to coordinate with parcel delivery companies to schedule deliveries to the site during hours outside the peak hour of loading, installing parcel lock boxes that allow parcel delivery personnel unsupervised access to enable off-hour deliveries, coordinating delivery services across buildings to enable the delivery of several buildings' packages to a single location, and/or encouraging deliveries to the retail and restaurant components of the projects to happen during early morning or late evening hours. The project sponsor may also address a shortfall by reserving parking spaces for smaller delivery vehicles such as autos or vans, which comprise approximately two-thirds of the vehicle types for freight	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		delivery service, on the ground floor of the Block D2 garage during peak or appropriate business hours for small-vehicle deliveries and, in connection therewith, providing hand trucks, bicycles, or electric wheeled carts for distribution of packages to buildings throughout the site. If plans for individual buildings include a driveway to off-street loading or parking (maximum 10 off-street spaces) along a frontage that has a designated on-street loading zone, an equivalent amount or level of off-street loading space shall be provided to effectively replace the lost on-street loading area. **M-TR-11.2: Coordinate Deliveries and Tenant Moving Activities.** The project's transportation coordinator and in-building concierges shall coordinate with building tenants and delivery services to minimize deliveries and moving activities during peak periods, and endeavor to spread deliveries across the full day and moving activities to time periods after regular working hours, thereby reducing activity during the peak hour for loading. Although many deliveries cannot be limited to specific hours, the transportation coordinator and in-building concierges shall work with tenants to find opportunities to consolidate deliveries and reduce the need for peak-period deliveries, wherever possible.	
Impact TR-12. The proposed project could result in significant impacts on emergency access to the project site or adjacent locations.	S	**M-TR-12: Coordinate Final Design of the "keep clear" zone on Mission Rock Street (in front of the Public Safety Building) with Police and Fire Departments.** Prior to finalizing the design and dimensions of the "keep clear" zone on Mission Rock Street in front of the police and fire truck access point (in front of the Public Safety Building), the project sponsor shall coordinate this design with the Police and Fire Departments. **I-TR-12: Strategies to Enhance Transportation Conditions During Large Events.** The project's Transportation Coordinator should participate as a member of the Mission Bay Ballpark Transportation Coordination Committee and provide at least 1-month notification prior to the start of any large event that would overlap with an event at AT&T Park.	LTS
Impact TR-13. The proposed project would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and particular characteristics of the proposed project would not render the use of other modes infeasible.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-TR-1. Construction of the proposed project would occur over an approximately 6-year time frame and may overlap with construction of other projects in the vicinity.	LTS	Implement **Improvement Measure I-TR-1, Construction Management Plan**.	NA
Impact C-TR-2. The proposed project's incremental effects on VMT would not be significant when viewed in combination with past, present, and reasonably foreseeable future projects.	LTS	None required.	NA
Impact C-TR-3. The proposed project would not contribute to a major traffic hazards.	S	Implement **Mitigation Measure M-TR-3**.	LTS
Impact C-TR-4. The proposed project would contribute considerably to a significant cumulative transit impact because it would increase ridership by more than 5 percent on one individual Muni route that would exceed 85 percent capacity utilization.	S	**M-C-TR-4: Provide Fair-Share Contribution to Improve 10 Townsend Line Capacity Proposed Project.** Upon completion and occupancy of Phase 1 and upon completion and occupancy of each subsequent phase of the proposed project as defined in the Disposition and Development Agreement, the project sponsor shall fund a transit capacity study to be reviewed and approved by the SFMTA. The project sponsor shall obtain from SFMTA the current ridership on the 10 Townsend and conduct an assessment of the capacity utilization at the screenline's Maximum Load Point (MLP) for weekday AM and PM peak hour conditions. If the capacity utilization exceeds 85 percent, a fair share payment shall be made to SFMTA by the project sponsor, calculated as further provided in a Transit Mitigation Agreement. Such payment shall be calculated in light of the project's progress towards one or the other of the development scenario (i.e. High Commercial or High Residential) as reflected by all phases of the project that have been completed up to such date. The fair share contributions by phase differ by scenario because the number of transit riders varies due to different mixes of land use. If the capacity utilization based on SFMTA's ridership data is less than 85 percent, then the project sponsor's fair share payment for that phase shall be $0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts. The project sponsor shall enter into a Transit Mitigation Agreement with the SFMTA under which the agreement shall provide for the project sponsor to make a fair share contribution to the cost of providing additional bus service or improving service on the 10 Townsend by paying a fee. The fair share contribution as documented in the Transportation Impact Study from the proposed project shall not exceed the following amounts, in total across all phases: a. $391,179 for High Commercial	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		b. $324,595 for High Residential SFMTA may determine that other measures to increase capacity along the route would be more desirable than adding buses and may use the funds provided by the project sponsor to implement these other measures, which include but are not limited to the following measures: 1. Convert to using higher-capacity vehicles on the 10 Townsend route. In this case, the project sponsor's fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available. 2. Instead of adding more buses to a congested route, it would be more desirable to increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements. 3. Another option to increase capacity along the corridor is to add a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles	
Impact C-TR-5. The proposed project would not contribute considerably to significant cumulative impacts on regional transit routes.	LTS	None required.	NA
Impact C-TR-6. The proposed project would contribute considerably to significant cumulative impacts related to transit delay.	S	Implement **Mitigation Measure M-TR-6**.	SUM
Impact C-TR-7. The proposed project would contribute considerably to significant cumulative pedestrian impacts.	S	Implement **Mitigation Measure M-TR-9**.	SUM
Impact C-TR-8. The proposed project would not contribute considerably to a significant cumulative bicycle impact.	S	Implement **Mitigation Measure M-TR-10**.	LTS
Impact C-TR-9. The proposed project could contribute to a significant cumulative loading	S	Implement **Mitigation Measure M-TR-11.1 and M-TR-11.2.**	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
impact.			
Impact C-TR-10. The proposed project would not contribute considerably to a significant cumulative impact on emergency vehicle access.	LTS	None required.	NA
Impact C-TR-11. The proposed project, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative parking impacts.	LTS	None required.	NA
Noise			
Impact NOI-1. Construction of the proposed project would generate noise levels in excess of standards or result in substantial temporary increases in ambient noise levels.	S	**M-NOI-1: Prepare and Implement a Construction Noise Control Plan to Reduce Construction Noise at Noise-Sensitive Land Uses.** The project sponsor shall develop a noise control plan that requires the following: • Construction contractors shall specify noise-reducing construction practices that will be employed to reduce construction noise from construction activities. The measures specified by the project sponsor shall be reviewed and approved by the City prior to the issuance of building permits. Measures that can be used to limit noise include, but are not limited to, those listed below. o Locate construction equipment as far as feasible from noise-sensitive uses. o Require that all construction equipment powered by gasoline or diesel engines have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation. o Idling of inactive construction equipment for prolonged periods shall be prohibited (i.e., more than 5 minutes). o Prohibit gasoline or diesel engines from having unmuffled exhaust systems. o Use noise-reducing enclosures around noise-generating equipment that has the potential to disturb nearby land uses. o Ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) wherever feasible. o Monitor the effectiveness of noise attenuation measures by taking noise measurements. A plan for noise monitoring shall be provided to the City for review prior to the commencement of each construction phase.	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		• Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be "quiet" gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used; which could achieve a reduction of 5 dBA. Quieter equipment shall be used when feasible, such as drills rather than impact equipment. • Construction contractors shall be required to use "quiet" gasoline-powered compressors or electrically powered compressors and electric rather than gasoline- or diesel-powered forklifts for small lifting. • Stationary noise sources, such as temporary generators, shall be located as far from nearby receptors as possible; they shall be muffled and enclosed within temporary enclosures and shielded by barriers, which could reduce construction noise by as much as 5 dB, or other measures, to the extent feasible. • Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the Planning Department and Department of Building Inspection a list of measures for responding to and tracking complaints pertaining to construction noise. These measures shall include: o Identification of measures that will be implemented to control construction noise. o A procedure and phone numbers for notifying the Department of Building Inspection, the Department of Public Health, or the Police Department of complaints (during regular construction hours and off hours). o A sign posted onsite describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction. o Designation of an onsite construction complaint and enforcement manager for the project. o A plan for notification of neighboring residents and nonresidential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise-generating activities	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		(defined as activities that generate noise levels of 90 dBA or greater) about the estimated duration of the activity and the associated control measures that will be implemented to reduce noise levels. Implement **Mitigation Measure M-NOI-3.1.**	
Impact NOI-2. Operation of the proposed project could result in the exposure of persons to or generation of noise levels in excess the San Francisco Noise Ordinance or a substantial temporary, periodic, or permanent increase in ambient noise levels in the project vicinity, above levels existing without the project.	S	**Mitigation Measure M-NOI-2.1: Noise Control Plan for Special Outdoor Amplified Sound.** To reduce potential impacts related to noise generated in by events in project outdoor use areas, the project sponsor shall develop and implement a Noise Control Plan for operations at the proposed entertainment venues to reduce the potential for noise impacts from public address and/or amplified music. This Noise Control Plan shall contain the following elements: • The project sponsor shall comply with noise controls and restrictions in applicable entertainment permit requirements for outdoor concerts, and shall comply with the Port of San Francisco's "Good Neighbor" standards, unless the Port Commission makes a specific finding that a particular condition is unnecessary or infeasible. • Speaker systems shall be directed away from the nearest sensitive receptors to the degree feasible. • In order to limit or prevent sleep disturbance, events with amplified sound shall, to the extent reasonable and appropriate given the nature and context of the event, end at 10:00 p.m. **Mitigation Measure M-NOI-2.2: Stationary Equipment Noise Controls.** Noise attenuation measures shall be incorporated into all stationary equipment (including HVAC equipment and emergency generators) installed on all buildings that include such stationary equipment as necessary to meet noise limits specified in Section 2909 of the Police Code. Interior noise limits shall be met under both existing and future noise conditions, accounting for foreseeable changes in noise conditions in the future (i.e., changes in on-site building configurations). 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. **Mitigation Measure M-NOI-2.3: Design of Future Noise-Sensitive Uses.** Prior to issuance of a building permit for a residential building on Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street, a noise study shall be conducted by a qualified acoustician to determine the need to incorporate noise attenuation measures into the building design in order to meet Title 24's interior noise limit for residential uses as well as the City's (Article 29,	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		Section 2909(d)) 45-dBA (Ldn) interior noise limit for residential uses. This evaluation shall account for the projected increase in traffic noise as a result of project traffic along Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street and any new shielding benefits provided by surrounding buildings that exist at the time of development, future cumulative traffic noise increases on adjacent roadways, existing and planned stationary sources (i.e., emergency generators, HVAC, etc.), and future noise increases from all known cumulative projects located with direct line-of-sight to the project building. **Mitigation Measure M-NOI-2.4: Design of Future Noise-Generating Uses near Residential Uses**. Future land uses shall be designed to minimize the potential for sleep disturbance (defined as exceeding 45 dBA at residential interiors during the hours of 10 p.m. to 7 a.m.) at any future adjacent residential uses. Design approaches including, but not limited to, the following shall be incorporated into future development plans to minimize the potential for noise conflicts of future uses on the project site: • Design of Future Noise-Generating Uses. To reduce potential conflicts between sensitive receptors and new noise-generating land uses located adjacent to these receptors, exterior facilities such as loading areas/docks, trash enclosures, and surface parking lots shall be located on the sides of buildings facing away from existing or planned sensitive receptors (e.g., residences). If this is not feasible, these types of facilities shall be enclosed or equipped with appropriate noise shielding. • Design of Future Above-Ground Parking Structure on Block D2. For parking garage on Block D2, the sides of the parking structures facing adjacent or nearby existing or planned residential uses shall be designed to shield residential receptors from noise associated with parking cars.	
Impact NOI-3. Construction of the project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to annoyance. Construction of the project could expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to damage to buildings.	S	**M-NOI-3.1: Pile-Driving Control Measures - Annoyance.** To reduce impacts associated with pile driving, a set of site-specific vibration attenuation measures shall be implemented under the supervision of a qualified acoustical consultant during the project construction period. These attenuation measures shall include as feasible, in consideration of technical and structural requirements and conditions, the following control strategy, as well as any other effective strategies to the extent necessary to achieve a PPV vibration level at neighboring properties of less than the strongly perceptible level of 0.10 in/sec. The project sponsor shall require the construction contractor to limit pile-driving activity so that the PPV vibration level at neighboring uses is less than 0.10 in/sec to the extent it is practical and necessary, and, to the extent it is practical,	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		implement "quiet" pile-driving technology, such as predrilling piles, using sonic pile drivers, or using more than one pile driver to shorten the total duration of pile driving. **M-NOI-3.2: Pile-Driving Vibration Control Measures – Damage.** To reduce the potential for damage to Pier 48, the following measures shall be implemented: ● The Port of San Francisco shall be notified in writing prior to construction activity that construction may occur within 100 feet of the Pier 48 buildings. ● The project sponsor shall retain a structural engineer, an architectural historian, and a licensed historical architect (hereafter referred to as the building evaluation team) to evaluate potentially affected buildings and determine their susceptibility to damage. The structural engineer shall evaluate the building structure. The architectural historian and licensed historical architect shall evaluate architectural elements. This building evaluation team shall then establish building-specific vibration thresholds that will (a) identify the level of vibration affected historic buildings will tolerate so as to preclude structural damage to the building of a nature that would result in material damage to any historic features of the buildings, and (b) identify the level of vibration at which cosmetic damage may begin to occur to buildings. ● The building evaluation team shall inventory and document existing cracks in paint, plaster, concrete, and other building elements. ● The building evaluation team shall develop a ground-borne vibration monitoring plan that will including monitoring vibration at the buildings of concern to determine if the established thresholds are exceeded. ● The project sponsor shall retain a qualified acoustical consultant or engineering firm to implement the vibration monitoring plan at Pier 48. As part of the monitoring plan, the consultant shall conduct regular periodic inspections for cosmetic damage to each building within 160 feet of planned ground-disturbing activity on the project site. ● Should vibration levels be observed in excess of the cosmetic damage threshold or cosmetic damage be observed below that level, the driving of piles within 100 feet of the Pier 48 structure (or within the impact distance determined by the study of building-specific vibration thresholds, per second bullet above, whichever distance is shorter) shall be halted until measures are implemented to prevent cosmetic damage to the extent feasible. These measures include use of alternative construction techniques, including, but not limited to, use of pre-drilled piles if soil conditions allow, use of smaller, lighter equipment, using vibratory hammers in place of	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		impact hammers, and using pile cushioning or equipping the impact hammer with wooden cushion blocks to increase the period of time over which the energy from the driver is imparted to the pile**.** Should cosmetic damage to a building occur as a result of ground-disturbing activity on the site notwithstanding the use of alternative construction techniques, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site. • Should vibration levels be observed that reach the threshold designed to protect historic buildings from material damage to historic features, pile-driving within impact distances of the Pier 48 building, as determined by the building evaluation team, shall be halted and a structural bracing program or other appropriate protective measures for the potentially affected buildings shall be designed by the building evaluation team and implemented by the project sponsor. The structural bracing program or other protective measures shall be designed to prevent damage to the potentially affected buildings that could materially impair their historic resource status consistent with CEQA Guidelines Section 15064.5(b)(2). In addition, the structural bracing program shall be consistent with the proposed rehabilitation of the Pier 48 buildings and meet the Secretary of the Interior's Standards for Rehabilitation. Following completion of construction, the project sponsor shall conduct a second inspection to inventory changes in existing cracks and new cracks or damage, if any, that occurred as a result of pile driving. If new damage is found, then the project sponsor shall promptly arrange to have the damage repaired in accordance with recommendations made by the building evaluation team.	
Impact C-NOI-1. Construction activities for the proposed project, in combination with other past, present, and reasonable future projects in the city, would result in a substantial temporary increase in noise or noise levels in excess of the applicable local standards.	S	Implement **Mitigation Measure M-NOI-1**.	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-NOI-2. Construction activities associated with project-related development, in combination with other past, present, and reasonable future projects in the city, would expose sensitive receptors to excessive ground-borne vibration related to annoyance and could result in similar impacts related to damage to buildings.	S	Implement **Mitigation Measure M-NOI-3.1, Pile-Driving Control Measure – Annoyance, and M-NOI-3.2, Pile-Driving Vibration Control Measures – Damage**	SUM
Impact C-NOI-3. Operation of the proposed project, in combination with other past, present and reasonable future projects in the city, would result in the exposure of persons to noise in excess of the applicable local standards or a substantial permanent ambient noise level increase in the project vicinity.	S	NA	SU
Air Quality			
Impact AQ-1: Construction of the proposed project would generate fugitive dust and criteria air pollutants, which for criteria air pollutants but not fugitive dust, 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-1.1: Off-Road Construction Equipment Emissions Minimization.** The project sponsor shall require all construction contractors to implement the following measures to reduce construction emissions. A. Engine Requirements 1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall have engines that meet or exceed either USEPA or ARB Tier 4 Interim off-road emissions standards. Tier 4 final equipment, which may be largely available in the Bay Area, may be used to comply with this requirement (since Tier 4 final engines must comply with a stricter standard than Tier 4 interim engines, Tier 4 final engines meet Tier 4 interim standards and thus comply with this requirement). 2. Where access to alternative sources of power are available, portable diesel engines shall be prohibited. 3. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than 2 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 2-minute idling limit.	SUM

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

4. The contractor shall instruct construction workers and equipment operators regarding the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturers' specifications.

B. Waivers.

1. The Planning Department's Environmental Review Officer (ERO) or designee may waive the requirement for an alternative source of power from Subsection (A)(2) if an alternative source of power is limited or infeasible at the project site. If the ERO grants the waiver, the contractor must submit documentation that the equipment used for onsite power generation meets the requirements of Subsection (A)(1).
2. The ERO may waive the equipment requirements of Subsection (A)(1) if use of a particular piece of off-road equipment with a Tier 4 interim-compliant engine is not feasible or reasonable, the equipment would not produce the desired emissions reductions because of the expected operating modes, installation of the equipment would create a safety hazard or impair visibility for the operator, or there is a compelling emergency that requires use of off-road equipment that is not Tier 4 interim-compliant. If seeking an exception, the project sponsor shall demonstrate to the ERO's satisfaction that the resulting construction emissions would not exceed the health risk thresholds of significance for cancer risk and PM2.5 concentrations with respect to sensitive receptors, as identified within the EIR under Impact AQ-4. If the ERO grants the waiver, the contractor must use the next-cleanest piece of available off-road equipment, according to the table below.
3. Off-road Equipment Compliance Step-down Schedule

Compliance Alternative	Engine Emissions Standard	Emissions Control
1	Tier 3	ARB Level 2 VDECS
2	Tier 2	Alternative Fuel*

VDECS = Verified Diesel Emissions Control Strategies

* Alternative fuels are not a VDECS.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		4. How to use the table: If the ERO determines that the equipment requirements cannot be met, then the project sponsor must attempt to meet Compliance Alternative 1. If the ERO determines that the contractor cannot supply off-road equipment that meets Compliance Alternative 1, then the contractor must meet Compliance Alternative 2. C. Construction Emissions Minimization Plan. Before starting onsite 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 shall meet the requirements of Section A. 1. The 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, as such information is available, 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 VDECS installed, the description may include technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered an alternative fuel if it can be demonstrated to the Planning Department or the City's air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from the transport of fuel to the project site will not offset its NOx reduction potential. 2. The project sponsor shall ensure that all applicable requirements of the plan have been incorporated into the contract specifications. The plan shall include a certification statement, stating that the contractor agrees to comply fully with the plan. 3. The contractor shall make the 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 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.	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		D. Monitoring. After start of construction activities, the contractor shall submit quarterly reports to the ERO, documenting compliance with the plan. After completion of construction activities but 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, the duration of each construction phase, and the specific information required in the plan. **Mitigation Measure M-AQ-1.2: On-Road Material Delivery and Haul Trucks Construction Emissions Minimization.** The project sponsor shall require all construction contractors to implement the following measures to reduce construction haul truck emissions. *A.* Engine Requirements 1. The project sponsor shall also 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, and concrete trucks) be model year 2010 or newer. *B.* *Construction Emissions Minimization Plan*. As part of the *Construction Emissions Minimization Plan* identified above for Mitigation Measure M-AQ-1.1 Section C, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A. 1. The plan shall include estimates of the construction timeline by phase, with a description of how the on-road haul truck fleet required for every construction phase will comply with the engine requirements stated above. The plan shall also include expected fuel usage (or miles traveled) and hours of operation for the on-road haul truck fleet. For on-road trucks using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered as an alternative fuel if it can be demonstrated to the Planning Department or the City's air quality specialists that it is compatible with on-road truck engines and that emissions of ROG and NOx from transport of fuel to the project site will not offset its NOx reduction potential. 2. See Mitigation Measure M-AQ-1.1 Section C, Part 2. 3. See Mitigation Measure M-AQ-1.1 Section C, Part 3.	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		C. Monitoring. See Mitigation Measure M-AQ-1.1 Section D. **Mitigation Measure M-AQ-1.3: Low-VOC Architectural Coatings.** The project sponsor shall use low-VOC (i.e., ROG) coatings, beyond local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings), for at least 90 percent of all residential and nonresidential interior and exterior paints. This includes all architectural coatings applied during both construction and reapplications throughout the project's operational lifetime. At least 90 percent of coatings applied must meet the "super-compliant" VOC standard of less than 10 grams of VOC per liter of paint. After start of construction activities, the contractor shall submit quarterly reports to the ERO documenting compliance with this measure by providing an inventory listing the VOC content of all coatings purchased and applied during construction activities. For the reapplication of coatings during the project's operational lifetime, the Declaration of Covenants, Conditions, and Restrictions shall also contain a stipulation that low-VOC coatings must be used and a list of potential coatings shall be provided. A list of "super-compliant" coatings can be found on the South Coast Air Quality Management District's website: http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings. **Mitigation Measure M-AQ-1.4: Best Available Control Technology for In-Water Construction Equipment.** The project sponsor shall require all construction contractors to implement the following measures to reduce emissions from in-water equipment. *A.* Engine Requirements 1. The project sponsor shall ensure that the construction barge shall have engines that meet or exceed USEPA marine engine Tier 3 emissions standards. 2. The project sponsor shall also ensure that the construction work boat engine shall be model year 2005 or newer or meet NOx and PM emissions standards for that model year. *B. Construction Emissions Minimization Plan*. As part of the *Construction Emissions Minimization Plan* identified above for Mitigation Measure M-AQ-1.1 Section C, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A. 1. The plan shall include estimates of the construction timeline by phase, with a description of how each in-water equipment piece (e.g. barge engines, work boats) required for every construction phase will comply with the engine requirements stated above. The plan shall also include	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		expected fuel usage and hours of operation for in-water equipment. For in-water equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered as an alternative fuel if it can be demonstrated to the Planning Department or the City's air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from transport of fuel to the project site will not offset its NOx reduction potential. 2. See Mitigation Measure M-AQ-1.1 Section C, Part 2. 3. See Mitigation Measure M-AQ-1.1 Section C, Part 3. *D. Monitoring*. See Mitigation Measure M-AQ-1.1 Section D. **Mitigation Measure M-AQ-1.5: Emissions Offsets for Construction and Operational Ozone Precursor Emissions.** Prior to the estimated first year of exceedance, the project sponsor, with oversight of the Planning Department, shall either: 1. Directly implement a specific offset project or program to achieve emission reductions of 9.6 tons of ozone precursers to offset the combined emissions from construction and operations remaining above significance levels after implementation of identified mitigation measures. To qualify under this mitigation measure, the specific emissions reduction project must result in emissions reductions within the SFBAAB that are real, surplus, quantifiable, and enforceable and would not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement. Prior to implementation of the offset project, the project sponsor must obtain the Planning Department's approval of the proposed offset project by providing documentation of the estimated amount of emissions of ROG and NOx to be reduced (tons per year) within the SFBAAB from the emissions reduction project(s). The project sponsor shall notify the Planning Department within 6 months of completion of the offset project for Planning Department verification. 2. Pay a mitigation offset fee to the BAAQMD Bay Area Clean Air Foundation (Foundation) in an amount to be determined prior to the estimated first year of exceedance. The mitigation offset fee, currently estimated at approximately $18,030 per weighted ton, and not to exceed $35,000 per weighted ton of ozone precursors per year requiring emissions offsets plus an administrative fee of no more than 5 percent of the total offset to fund one or more emissions reduction projects within the SFBAAB. The fee will be determined by the Planning Department, the project sponsor, and the	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		BAAQMD 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 totaling 9.6 tons of ozone precursors per year, the estimated maximum tonnage of operational and construction-related emissions offsets required to reduce emissions below significance levels after implementation of other identified mitigation measures This total emissions offset amount was calculated by summing the maximum daily construction and operational emissions of ROG and NO_x (pounds/day), multiplying by 260 work days per year for construction and 365 days per year for operation, and converting to tons. The amount represents the total estimated operational and construction-related ROG and NOx emissions offsets required. Documentation of payment shall be provided to the Planning Department. Unless directly implementing a specific offset project (or program) as described above, the project sponsor would enter into a Memorandum of Understanding (MOU) with the BAAQMD Foundation. The MOU will include details regarding the funds to be paid, the administrative fee, and the timing of the emissions reductions project. Acceptance of this fee by the BAAQMD shall serve as acknowledgment and a commitment to (1) implement an emissions reduction project(s) within a time frame to be determined, based on the type of project(s) selected, after receipt of the mitigation fee to achieve the emissions reduction objectives specified above and (2) provide documentation to the Planning Department and the project sponsor describing the project(s) funded by the mitigation fee, including the amount of emissions of ROG and NOx reduced (tons per year) within the SFBAAB from the emissions reduction project(s). To qualify under this mitigation measure, the specific emissions reduction project must result in emission reductions within the SFBAAB that are real, surplus, quantifiable, and enforceable and would not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement.	
Impact AQ-2. During project operations, the proposed project would result in emissions of criteria air pollutants 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.	S	Implement **Mitigation Measure M-AQ-1.1 through M-AQ-1.5**. **Mitigation Measure M-AQ-2.1: Best Available Control Technology for Operational Diesel Generators.** The project sponsor shall ensure that the operational backup diesel generators comply with the following: (1) ARB Airborne Toxic Control Measure (ATCM) emissions standards for model year 2008 or newer engines; and (2) meet or exceed one of the following emission standards for particulate matter: (A) Tier 4 interim certified engine or (B) Tier 2 or Tier 3 certified engine that is equipped with an ARB Level 3 VDECS. A nonverified diesel emissions control strategy may be used if the filter has the	SUM

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		same particulate matter reduction as the identical ARB-verified model and BAAQMD approves of its use. The project sponsor shall submit documentation of compliance with the BAAQMD NSR permitting process (Regulation 2, Rule 2, and Regulation 2, Rule 5) and the emissions standard requirement of this measure to the Planning Department for review and approval prior to issuance of a permit for a backup diesel generator from any City agency. **Mitigation Measure M-AQ-2.2: Reactive Organic Gases Emissions Reduction Measures.** To reduce ROG emissions associated with the project, the project sponsor shall provide education for residential and commercial tenants to help reduce area source (e.g., architectural coatings, consumer products, and landscaping) emissions associated with residential and building operations. Prior to receipt of any building permit and every 5 years thereafter, the project sponsor shall work with the San Francisco Department of Environment to develop electronic correspondence, which will be distributed by email annually to tenants of the project that encourages the purchase of consumer products that are better for the environment and generate fewer VOC emissions. The correspondence shall encourage environmentally preferable purchasing and include contact information and links to SF APPROVED. While microbreweries do not typically implement emission control devices, to further reduce ROG (primarily ethanol) emissions associated with Pier 48 industrial operations, the project sponsor shall implement technologies to reduce ethanol emissions if available and practicable. Such measures could include wet scrubbers, ethanol recovery and capture (e.g., carbon absorption) or incineration. **Mitigation Measure M-AQ-2.3: Transportation Demand Management.** The project sponsors shall prepare and implement a Transportation Demand Management (TDM) Plan. The TDM Plan shall have a goal of reducing estimated aggregate daily one-way vehicle trips by 20 percent compared to the aggregate daily one-way vehicle trips identified in the project's travel demand memo, prepared by Adavant Consulting, dated June 30, 2015 ("Travel Demand Memo"), and attached as Appendix 4-4 to the Draft EIR. The project sponsors shall be responsible for monitoring implementation of the TDM Plan and proposing adjustments to the TDM Plan if its goal is not being achieved, in accordance with the following provisions. The TDM Plan may include, but is not limited to, the types of measures summarized below by way of example. TDM Plan measures shall generally be consistent with the City's adopted TDM Program Standards and the draft proposed TDM Plan prepared by Nelson Nygaard, dated September 2016, and attached as Appendix 4-5 to the Draft EIR. The TDM Plan describes the scope and applicability of candidate measures in detail, and may include, for example:	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		• Active Transportation: Provision of streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bike share memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services; • Car-Share: Provision of car-share parking spaces and subsidized memberships for project occupants; • Delivery: Provision of amenities and services to support delivery of goods to project occupants; • Family-Oriented Measures: Provision of on-site childcare and other amenities to support the use of sustainable transportation modes by families; • High-Occupancy Vehicles: Provision of carpooling/vanpooling incentives and shuttle bus service; • Information and Communications: Provision of multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services; • Land Use: Provision of on-site affordable housing and healthy food retail services in underserved areas; • Parking: Provision of unbundled parking, short-term daily parking provision, parking cash out offers, and reduced off-street parking supply. The TDM Plan shall describe each measure, including the degree of implementation (e.g., how long will it be in place, how many tenants or visitors it will benefit, on which locations within the site it will be placed, etc.) and the population that each measure is intended to serve (e.g., residential tenants, retail visitors, employees of tenants, visitors). The TDM Plan shall commit to monitoring vehicle trips to and from the project site to determine the TDM Plan's effectiveness, as required by TDM Plan Monitoring and Reporting outlined below. The TDM Plan shall have been approved by the Planning Department prior to site permit application for the first building and the TDM Plan shall be implemented as to each new building upon the issuance of the certificate of occupancy for that building. The TDM Plan shall remain a component of the proposed project to be implemented for the duration of the project. *TDM Plan Monitoring and Reporting*: the TDM Coordinator shall collect data, prepare monitoring reports and submit them to the Planning Department. To ensure the goal of reducing by 20 percent the aggregate daily one-way vehicle trips is reasonably achievable, the project sponsor shall monitor daily one-way vehicles trips for all buildings that have received a Certificate of Occupancy, and	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		compare these vehicle trips to the aggregate daily one-way vehicle trips anticipated for the those buildings based on the trip generation rates contained within the proposed project Travel Demand Memo. ● **Timing:** The TDM Coordinator shall collect monitoring data and shall begin submitting monitoring reports to the Planning Department beginning 18 months after the completion and commencement of operation of the proposed garage on Block D. Thereafter, annual monitoring reports shall be submitted (referred to as "reporting periods") until five consecutive reporting periods show that the project has met the reduction goal, at which point monitoring data shall be submitted to the Planning Department once every 3 years. The project sponsor shall complete each trip count and survey (see below for description) within 30 days following the end of the applicable reporting period. Each monitoring report shall be completed within 90 days following the applicable reporting period. The project sponsor shall modify the timing of monitoring reports such that a new monitoring report is submitted 12 months after adjustments are made to the TDM Plan in order to meet the reduction goal, as may be required under the "TDM Plan Adjustments" heading, below. In addition, the Planning Department may modify the timing of monitoring reports as needed to consolidate this requirement with other monitoring and/or reporting requirements for the project, such as annual reporting under the proposed project Development Agreement. ● **Term:** The Project Sponsor shall monitor, submit monitoring reports, and make plan adjustments as provided below until the earlier of: (i) the expiration of the Development Agreement, or (ii) the reduction goal has been met for up to eight consecutive reporting periods as determined by the Planning Department. Notwithstanding the foregoing or any other provision of this mitigation measure, all obligations for monitoring, reporting and for making adjustments to the TDM Plan shall terminate if the project sponsor has paid and/or made a commitment to pay the offset fee for any shortfall in the TDM Plan's meeting the reduction goal as provided below. ● **Components:** The monitoring and reporting, including trip counts, surveys and travel demand information, shall include the following components or comparable alternative methodology and components, as approved, accepted or provided by Planning Department staff: o Trip Count and Intercept Survey: Provide a site-wide trip count and intercept survey of persons and vehicles arriving and leaving the project site, other than on AT&T Park ballgame or other major event (e.g., concert or other event substantially occupying the capacity of	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		AT&T Park) days or hours, for no less than two days during the reporting period between 6:00 a.m. and 8:00 p.m. One day shall be a Tuesday, Wednesday, or Thursday during one week without federally recognized holidays, and another day shall be a Tuesday, Wednesday, or Thursday during another week without federally recognized holidays. The trip count and intercept survey shall be prepared by a qualified transportation or survey consultant, and the Planning Department shall approve the methodology prior to the Project Sponsors conducting the components of the trip count and intercept survey. The Planning Department anticipates it will have a standard trip count and intercept survey methodology developed and available to project sponsors at the time of data collection. o Travel Demand Information: The above trip count and survey information shall be able to provide the travel demand analysis characteristics (work and non-work trip counts, origins and destinations of trips to/from the project site, and modal split information), as outlined in the Planning Department's *Transportation Impact Analysis Guidelines for Environmental Review*, October 2002, or subsequent updates in effect at the time of the survey. o Documentation of Plan Implementation: The TDM coordinator shall work in conjunction with the Planning Department to develop a survey (online or paper) that can be reasonably completed by the TDM coordinator and/or Transportation Management Association (TMA) staff members to document implementation of TDM program elements and other basic information during the reporting period. The project sponsors shall include this survey in the monitoring report submitted to the Planning Department. o Assistance and Confidentiality: The Planning Department will assist the TDM coordinator with questions regarding the components of the monitoring report and will assist the TDM coordinator in determining ways to protect the identity of individual survey responders. <u>*TDM Plan Adjustments*</u>. The project sponsors shall adjust the TDM Plan according to the monitoring results if three consecutive reporting periods demonstrate that measures within the TDM Plan are not achieving the reduction goal. The TDM Plan adjustments shall be made in consultation with the Planning Department and may require refinements to existing measures (e.g., changes to subsidies, increased bicycle parking), inclusion of new measures (e.g., a new technology or project operational changes not inconsistent with any agreements with the Port), or removal of existing measures (e.g., measures that are ineffective or induce	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		vehicle trips).[3] If three consecutive reporting periods' monitoring results demonstrate that measures within the TDM Plan are not achieving the reduction goal, the project sponsors shall propose TDM Plan adjustments to be incorporated in the TDM Plan within 270 days following the last reporting period. The project sponsors shall implement the TDM Plan adjustments until the results of three consecutive reporting periods demonstrate that the reduction goal is being achieved. If after implementing TDM Plan adjustments as described above, and the project sponsors have not met the reduction goal for up to eight consecutive reporting periods as determined by the Planning Department, the project sponsors may, at any time thereafter, elect to address the shortfall in meeting the TDM Plan reduction target by, in addition to paying the emission offset fees set forth in Mitigation Measure M-AQ-1.5, also paying an additional offset fee in accordance with Mitigation Measure M-AQ-1.5, in the amount required to address, both the shortfall in reduction during the previously monitored years and the anticipated shortfall in the remaining expected years of project operations, the latter of which shall be based on the shortfall that occurred in the most recently monitored year. Calculations of emissions to be offset shall be based on the total amount of emissions anticipated to be reduced by achieving the 20 percent TDM goal adjusted for the actual percentage of aggregate daily one-way vehicle trip reduction achieved in the most recently monitored year.	
Impact AQ-3. During combined project construction and operations, the proposed project would result in emissions of criteria air pollutants 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.	S	Implement **Mitigation Measures M-AQ-1.1 through M-AQ-1.5, M-AQ-2.1 through M-AQ-2.3**.	SUM
Impact AQ-4. Construction and operation of the proposed project would generate toxic air contaminants, including diesel particulate matter, and could expose sensitive receptors to substantial air pollutant concentrations.	S	Implement **Mitigation Measures M-AQ-1.1, M-AQ-2.2, M-AQ-1.4, M-AQ-2.1, and M-AQ-2.3**.	LTS

[3] No parking-related restrictive measures on the project site shall by design or effect, restrict parking on the project site for patrons of AT&T ballpark games or events.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact AQ-5. The proposed project would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan.	S	Implement **Mitigation Measures M-AQ-1.1 through M-AQ-1.5 and M-AQ-2.1 through M-AQ-2.3**.	LTS
Impact AQ-6. The project would not result in significant exposure of sensitive receptors to asbestos during demolition activities.	LTS	None required.	NA
Impact AQ-7. The proposed project would not create objectionable odors that would affect a substantial number of people.	LTS	None required.	NA
Impact C-AQ-1. The proposed project's construction and operation, in combination with other past, present and reasonable future projects, would contribute to cumulative regional air quality impacts.	S	Implement **Mitigation Measures M-AQ-1.5**.	SUM
Impact C-AQ-2. The proposed project's construction and operation, in combination with other past, present and reasonable future projects, could generate toxic air contaminants, including diesel particulate matter, but would not expose sensitive receptors to substantial pollutant concentrations.	S	Implement **Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, and M-AQ-2.1**.	LTS
Impact C-AQ-3. The proposed project's construction and operation, in combination with other past, present and reasonable future projects, would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan.	S	Implement **Mitigation Measures M-AQ-1.1 through M-AQ-1.5 and M-AQ-2.1 through M-AQ-2.3.**	LTS
Impact C-AQ-4. The proposed project's construction, in combination with other past, present and reasonable future projects, would not expose sensitive receptors to asbestos during demolition activities.	LTS	None required.	NA
Impact C-AQ-5. The proposed project's construction, in combination with other past, present and reasonable future projects, would not create objectionable odors that would affect a substantial number of people.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Greenhouse Gas Emissions			
Impact GG-1: The proposed project would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions.	LTS	None required.	NA
Wind/Shadow			
Impact WS-1. The project would alter wind in a manner that would substantially affect public areas.	S	**M-WS-1: Assessment and Mitigation of Wind Hazards on a Building-by-Building Basis.** 1. Prior to or as part of the submittal package for the schematic design of a new building (Proposed Building), the Proposed Building developer shall submit to the Planning Department, for its review and approval, a report from a Qualified Wind Consultant (QWC) that reviews the Proposed Building schematic design, absent landscaping.4 "QWC" means a wind consultant retained by the Proposed Building(s) developer and approved by the Planning Department for preparation of the report. The EIR wind consultant for the proposed project and any other wind consultant on the City's then approved list or otherwise approved by the City will be considered a QWC. 2. The QWC report shall evaluate whether the Proposed Building(s) would create a Significant Wind Impact. "Significant Wind Impact" means a substantial increase on a site-wide basis in the number of hours per year that the 26 mph wind hazard criterion is exceeded or, if baseline wind conditions are greater than 26 mph, a substantial increase in the area subjected to winds greater than 26 mph. This analysis shall focus on the entire project area that was studied in wind tunnel tests conducted for the EIR and not just the area immediately surrounding the Proposed Building(s). 3. The QWC shall consider the Proposed Building(s) in the context of the "Current Project," which, at any given time during construction of the Project, shall be defined as the building masses used in the Original Model (Wind Study Configuration B5), except as updated to reflect schematic design	SUM

[4] The scope of work for this report shall use the same methodology and wind test point locations as the Wind Study prepared for this EIR.

[5] All references to the Wind Study refer to the Mission Rock EIR Pedestrian Wind Study Wind Tunnel Tests Report prepared by RWDI, final report, January 25, 2017, which can be found in Appendix 7-1 to this EIR.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		submittals for any previously approved building that has not yet commenced construction, and construction permit designs for on-site buildings that are under construction or have completed construction. This model shall be referred to as the "Current Project" and shall be updated over time as architectural design for each proposed project block/building is completed. 4. The Proposed Building shall be tested in the wind tunnel as proposed, including any architectural features that can be shown on plans to mitigate wind effects.6 Testing may not include any existing or proposed onsite landscaping. A separate test shall be conducted with existing and proposed onsite landscaping included, if required per Section 5, below. The accompanying report shall compare the wind tunnel results analyzing the Proposed Building in the context of the Current Project to the following two baselines: (1) the EIR baseline conditions for the project site (Wind Study Configuration A), and (2) Existing Plus Project (i.e., with Mission Rock proposed project) conditions used in the EIR (Wind Study Configuration B). 5. No further analysis shall be required if the QWC concludes, and the Planning Department concurs, that the Proposed Building's schematic design, absent proposed onsite landscaping, would not create a Significant Wind Impact. If the QWC concludes that the Proposed Building's schematic design, absent proposed onsite and existing offsite landscaping, would create a Significant Wind Impact, as defined above, then a second wind tunnel test shall be conducted, taking into account proposed onsite landscaping and existing offsite landscaping. The intent of landscaping is to emulate the function and effect of a manmade wind screen. The following parameters have been determined to be the minimum requirements for landscaping features to be effective in controlling wind:[7] • It is the combined effect of a cluster or group of landscaping features that is most effective, rather than the maturity of one tree. • Since a general rule is that vertical wind control features should be taller than the average height of a person, foliage from the ground up is most effective at a height of approximately 6 to 8 feet.	

[6] These could include features such as setbacks, wind baffles, randomized balconies, overhands, canopies, awnings and the like, provided they are consistent with the project's Design Controls and shown on schematic architectural plans for the Proposed Building.

[7] RWDI, Landscaping, December 8, 2016.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		• Since winds can easily flow under tree crowns, underplantings (e.g., shrub plantings at the base of a tree) should be included where trunks are bare for the first 5 to 6 feet of a tree measured from the ground. • Tree crowns with at least 60 percent cover (density of leafage) and even spread of branches are most effective.	
Impact C-WS-1: The project, in combination with past, present, and reasonably foreseeable future projects, would alter wind in a manner that would substantially affect public areas.	S	Implement **Mitigation Measure M-WS-1.**	SUM
Impact WS-2. The proposed project would not create new shadow in a manner that would substantially affect outdoor recreation facilities or public areas.	LTS	None required.	NA
Impact C-WS-2: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not create new shadow in a manner that would substantially affect outdoor recreational facilities or public areas.	LTS	None required.	NA
Public Services and Recreation			
Impact PS-1. The proposed project would increase demand for fire protection services but not to such an extent that construction of new or expanded facilities would be required.	LTS	None required.	NA
Impact PS-2. The proposed project would increase demand for police services but not to such an extent that construction of new or expanded facilities would be required.	LTS	None required.	NA
Impact PS-3. The proposed project would increase demand for school services but not to such an extent that construction of new or expanded facilities would be required.	LTS	None required.	NA
Impact PS-4. The proposed project would increase demand for park and open space services but not to such an extent that construction of new or expanded facilities would be required.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact PS-5. The proposed project would not increase the use of existing neighborhood parks, regional parks, or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.	LTS	None required.	NA
Impact PS-6. The proposed project would include recreational facilities or require the construction or expansion of recreational facilities, but they would not have an adverse physical effect on the environment beyond that analyzed and disclosed in this EIR.	LTS	None required.	NA
Impact PS-7. The proposed project would not increase demand for library services to the extent that construction of new or expanded library facilities would be required.	LTS	None required.	NA
Impact C-PS-1: The proposed project, in combination with other development in the city, would not result in significant adverse cumulative impacts on fire protection, police protection, schools, parks, libraries and other services.	LTS	None required.	NA
Impact C-PS-2: The proposed project, in combination with other development in the city, 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.	LTS	None required.	NA
Utilities and Service Systems			
Impact UT-1. The project would have sufficient water supplies available to serve the project from existing entitlements and resources, and no new or expanded entitlements would be needed. In addition, the project would not require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact UT-2. The project would not exceed treatment requirement standards of the Regional Water Quality Control Board and would not require or result in the construction of new wastewater or stormwater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LTS	None required.	NA
Impact UT-3. The project would comply with solid waste regulations and would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	LTS	None required.	NA
Impact UT-4. The project would not encourage activities that would result in the use of large amounts of fuel, water, or energy or use these resources in a wasteful manner.	LTS	None required.	NA
Impact C-UT-1. The project, combined with other development in the city, would have sufficient water supplies available from existing entitlements and resources; no new or expanded entitlements would be needed. In addition, the project would not require or result in the construction of new water treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.	LTS	None required.	NA
Impact C-UT-2. The project, combined with other development in the city, would not exceed treatment requirements of the Regional Water Quality Control Board and would not require or result in the construction of new wastewater or stormwater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-UT-3. The project, combined with other development within Recology's service area, would not exceed service area solid waste disposal capacity and would be expected to comply with federal, state, and local statutes and regulations related to solid waste.	LTS	None required.	NA
Impact C-UT-4. The project, in combination other development in the city, would not result in wasteful, inefficient, or unnecessary energy use, and the project, in combination with other development served by PG&E, would not exceed existing gas and electric supply capacity.	LTS	None required.	NA
Biological Resources			
Impact BI-1: Construction and operation of the proposed project would not decrease water quality to the extent that a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS would occur.	LTS	None required.	NA
Impact BI-2: Changes in shading and habitat at Pier 48 would not result in a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS.	LTS	None required.	NA
Impact BI-3: Impact pile driving and vibratory driving and extraction from construction of Pier 48 seismic upgrades could have a substantial adverse effect on fish and marine mammal species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS.	S	**M-BI-3.1: Conduct Impact Hammer Pile Driving during Periods that Avoid Special-Status Fish Species' Spawning and Migration Seasons.** In-water pile installation using impact hammers shall occur within the work window of June 1 to November 30, which has been established for dredging in San Francisco Bay to reduce potential effects on special-status fish species. **M-BI-3.2: Pile-Driving Noise Reduction for the Protection of Fish.** Prior to the start of pile driving in the Bay, the project sponsor shall develop an underwater noise monitoring and attenuation plan and obtain approval from NMFS. The NMFS-approved plan or any modifications shall be provided to the City Planning Department for determination of consistency with the requirements in this measure.	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		The plan shall provide details regarding the estimated underwater sound levels expected, sound attenuation methods, methods used to monitor and verify sound levels during pile-driving activities, and management practices to be taken to reduce pile-driving sound in the marine environment to below NMFS thresholds for injury to fish. The plan shall incorporate, but not be limited to, the following BMPs: • All steel pilings shall be installed with a vibratory pile driver to the deepest depth practicable. An impact pile driver may be used only where necessary, as determined by the contractor and/or project engineer, to complete installation of the steel pilings, in accordance with seismic safety or other engineering criteria. • The smallest pile driver and minimum force shall be used to complete the work necessary to meet NMFS requirements, as determined by the contractor and/or project engineer. • The hammer shall be cushioned using a 12-inch-thick wood block during all impact hammer pile-driving operations. • To reduce impacts to levels below injury thresholds, based on hydroacoustic monitoring and the amount of impact pile driving occurring on a particular day, a bubble curtain, wood block cushion, air barrier, or similar technology shall be employed during impact pile-driving activities. • A "soft start"[8] technique shall be employed upon initial pile-driving activities every day to allow fish an opportunity to vacate the area. • During impact pile driving, the contractor shall limit the number of strikes per day to the minimum necessary to complete the work, as determined by the contractor and/or project engineer. • No pile driving shall occur at night. • During impact pile driving, a qualified fish biologist shall monitor the project site for fish that exhibit signs of distress. If fish are observed exhibiting signs of injury or distress, work shall be halted by the biologist, and the cumulative SEL up to that point shall be examined. If the cumulative SEL is close to the threshold or exceeds the threshold, then pile-driving activities will cease until the next day.	

[8] Soft starts require an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period between subsequent three-strike sets. Soft starts for vibratory hammers will initiate noise at 15 seconds at reduced energy, followed by a 1-minute waiting period between subsequent starts. This process should continue for a period of no less than 20 minutes.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		All pile-driving and pile-removal activity shall be monitored by a NMFS-approved biological monitor before and during all pile driving. The biological monitor shall maintain a monitoring log of daily pile-driving activities, any field sound measurements, fish sightings, and implementation of soft-start and shut-down requirements. A monitoring report shall be prepared for submission to NMFS and the City (submitted monthly and at the completion of all pile-driving/pile removal activities). **M-BI-3.3: Pile-Driving Noise Reduction for Protection of Marine Mammals.** Prior to the start of pile driving in the Bay, as part of the underwater noise monitoring and attenuation plan required by Mitigation Measure M-BI-3.2, the project sponsor shall provide details regarding the estimated underwater sound levels expected, not just from impact hammer pile driving that may affect fish but also from vibratory pile driving and removal because these sound levels may affect marine mammals. The plan shall also address sound attenuation methods, methods used to monitor and verify sound levels during pile-driving activities, and management practices to be taken to reduce pile-driving sound in the marine environment to below NMFS thresholds for injury to marine mammals. As part of implementation of the sound attenuation monitoring plan, the project sponsor shall take actions to reduce the effect of underwater noise transmission on marine mammals. These actions shall include, at a minimum: ● The establishment of initial safety zones, based on the estimated NMFS injury threshold contours for the different marine mammals (as shown in Table 4.L-8 and Table 4.L-9). The initial size of the safety zones may be modified, based on subsequent analysis of the anticipated noise levels and the actually proposed piles, equipment, and activity prior to construction but only with the approval of NMFS. ● Hydroacoustic monitoring, according to the NMFS-approved sound attenuation and monitoring plan, which shall be completed during initial pile driving to verify projected isopleths for pile driving and removal. The plan shall require real-time hydroacoustic monitoring for a sufficient number of piles to determine and verify modeled noise isopleths. The safety zones established prior to construction may be modified, based on field measurements of noise levels from different pile-driving activities, if the field measurements indicate that different noise threshold contours than those estimated prior to construction are appropriate but only with the approval of NMFS. ● Halting of work activities when a marine mammal enters a safety zone (specific to that species) and resumed only after the animal has not been observed within the safety zone for a minimum of 15 minutes.	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		• Use of a "soft start"[9] technique each day upon commencement of pile-driving activity, any time after ceasing pile-driving activity for more than 1 hour, and any time after shutdown due to marine mammal entry into a safety zone. • Monitoring by an NMFS-approved biological monitor of all pile-driving and pile-removal activity before and during all pile driving/removal to inspect the work zone and adjacent Bay waters for marine mammals and implement the safety zone requirements described above. The biological monitor shall maintain a monitoring log of daily pile-driving/removal activities, any field sound measurements, marine mammal sightings, and implementation of soft-start, shut-down, and safety-zone requirements. A monitoring report shall be prepared for submission to the City and NMFS (submitted monthly and at the completion of all pile-driving/pile-removal activities).	
Impact BI-4: The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or established native-resident or migratory wildlife corridors.	LTS	None required.	NA
Impact BI-5: Construction of the proposed project could affect migratory nesting birds.	S	**M-BI-5: Conduct Pre-Construction Surveys for Nesting Migratory Birds.** To facilitate compliance with state and federal laws (California Fish and Game Code and the MBTA) and prevent impacts on nesting migratory birds, the project sponsor shall avoid vegetation/structure removal, ground-disturbing activities, and elevated noise levels near suitable nesting habitat during the nesting season (February 1 through August 31) or conduct pre-construction surveys, as described below. Alternatively, the project sponsor may remove vegetation or structures that may support nesting birds outside of the breeding season such that no breeding habitat would be present should construction start in the normal breeding season. If it is not feasible to avoid the nesting season and suitable nesting areas remain on the project site, the project sponsor shall hire a qualified wildlife biologist with demonstrated nest-searching experience to conduct surveys for nesting birds, including raptors. The following list details the nesting bird survey requirements for this project.	LTS

[9] Soft starts require an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period between subsequent three-strike sets. Soft starts for vibratory hammers will initiate noise at 15 seconds at reduced energy, followed by a 1-minute waiting period between subsequent starts. This process should continue for a period of no less than 15 minutes.

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		• One nesting bird assessment is required at the beginning of each year, at the start of the nesting bird season (February), to determine if suitable nesting habitat remains or has been reinstated (e.g., the project site is revegetated). • If suitable nesting habitat is present, one nesting survey shall be conducted between February and April, and one nesting survey shall be conducted between April and June. • Additional nesting surveys are required when construction work stops at a portion of the site where suitable nesting habitat remains for more than 15 days or if construction is phased in such a way that no disturbance has occurred in a portion of the project site. • If active nests are observed during construction when the wildlife biologist is not present, all work within 250 feet of the nest shall stop, and wildlife biologist shall be contacted immediately. All personnel shall move at least 250 feet away from the nest. To the extent feasible, after consulting with the wildlife biologist, construction equipment shall be shut down or moved 250 feet away from the nest. Nesting bird surveys shall be performed no earlier than 7 days prior to the commencement of ground-disturbing activities and vegetation removal (including clearing, grubbing, and staging). The area surveyed shall include all construction areas as well as areas within 250 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist. If the wildlife biologist finds any active nests (e.g., a nest with eggs, chicks, or young) during the survey, the biologist shall establish no-disturbance species-specific buffer zones for each nest, marked with high-visibility fencing, flagging, or pin flags. No construction activities shall be allowed within the buffer zones. The size of the buffer shall be based on the species' sensitivity to disturbance and planned work activities in the vicinity; typical buffer sizes are 250 feet for raptors and 50 feet for other birds. The buffer shall remain in effect until the chicks have fledged from the nest or the nest is no longer active, which will be verified by the biologist. If inactive nests are identified, the project sponsor or its contractor shall remove those nests from the structure/vegetation and install nest exclusion measures on structures (i.e., fine mesh netting, panels, or metal projectors) outside of the nesting season, if deemed necessary and suitable by the qualified wildlife biologist. All exclusionary devices shall be monitored and maintained throughout the breeding season to ensure that they are successful in preventing the birds from accessing the cavities or nest sites.	

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
		After each survey and/or after nest-deterrence activities are completed, the wildlife biologist shall complete a memorandum detailing the survey effort and results and submit the memorandum to the project sponsor within 7 days of survey completion.	
Impact BI-6: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	None required.	NA
Impact C-BI-1: The proposed project, in combination with future development in the city, would affect water quality but not to the extent that a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS would occur. As such, the proposed project's contribution would not be cumulatively considerable.	LTS	None required.	NA
Impact C-BI-2: Future development in the city may result in shading that could result in a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS. However, the project would not result in a net permanent increase in shading of the Bay, and the proposed project's contribution would be not cumulatively considerable.	LTS	None required.	NA
Impact C-BI-3: The proposed project, in combination with future development in the city, would not have a substantial adverse effect on a fish species or marine mammals identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS due to pile driving.	S	Implement Mitigation Measures **M-BI-3.1: Conduct Impact Hammer Pile Driving during Periods that Avoid Special-Status Fish Species' Spawning and Migration Seasons**, **M-BI-3.2: Pile-Driving Noise Reduction for the Protection of Fish**, and **M-BI-3.3: Pile-Driving Noise Reduction for Protection of Marine Mammals**.	LTS

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-BI-4: The proposed project, in combination with future development in the city, would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or established native-resident or migratory wildlife corridors.	LTS	None required.	NA
Impact C-BI-5: Construction of the proposed project, in combination with future development in the city, could affect nesting birds.	S	Implement **Mitigation Measure M-BI-5: Conduct Pre-Construction Surveys for Nesting Migratory Birds**.	LTS
Impact C-BI-6: The proposed project, in combination with future development in the city, would not result in a considerable contribution to significant cumulative impacts on local policies or ordinances to protect biological resources, such as a tree preservation policy or ordinance.	LTS	None required.	NA
Geology and Soils			
Impact GE-1a. The project would not expose people or structures to risk of loss, injury, or death involving rupture of a known earthquake fault.	LTS	None required.	NA
Impact GE-1b. The project would not expose people or structures to risk of loss, injury, or death involving strong seismic ground shaking.	LTS	None required.	NA
Impact GE-1c. The project would not expose people or structures to risk of loss, injury, or death involving seismically related ground failure, including liquefaction.	LTS	None required.	NA
Impact GE-2. The project would not result in substantial soil erosion or the loss of topsoil.	LTS	None required.	NA
Impact GE-3. The project would not be located on geologic unit or soil that is unstable or would become unstable and potentially result in lateral spreading, subsidence, liquefaction, or collapse.	LTS	None required.	NA
Impact GE-4. The project would not create substantial risks to life or property through location on expansive or corrosive soil.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact GE-5. The project would could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	S	**M-GE-5: Accidental discovery of paleontological resource.** Given the potential for paleontological resources to be present at the project site at excavation depths within the Colma Formation, the following measures shall be undertaken to avoid any significant adverse effect from the proposed project on paleontological resources. Before the start of any drilling or pile-driving activities, the project sponsor shall retain a qualified paleontologist, as defined by the SVP, who is experienced in teaching nonspecialists. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that are likely to be seen during construction, and proper notification procedures should fossils be encountered. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate the significance. If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work near the find and notify the project sponsor and the San Francisco Planning Department. Construction work in the affected areas shall remain stopped or be diverted to allow recovery of fossil remains in a timely manner. The project sponsor shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with SVP guidelines. The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the San Francisco Planning Department to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered. The San Francisco Planning Department shall be responsible for ensuring that the monitor's recommendations regarding treatment and reporting are implemented.	LTS
Impact C-GE-1. The proposed project, in combination with other development within the city, would not substantially increase the risk of exposure for people or structures to seismic hazards.	LTS	None required.	NA
Impact C-GE-2. The proposed project, in combination with other development within the city, would not substantially increase soil erosion potential.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-GE-3. The proposed project, in combination with other development within the city, would not substantially increase soil hazards.	LTS	None required.	NA
Impact C-GE-4. The proposed project, in combination with other development within the city, could not result in impacts to paleontological resources. However, the project's contribution would be less than cumulatively considerable.	S	Implement **M-GE-5: Accidental discovery of paleontological resource.**	LTS
Hydrology and Water Quality			
Impact HY-1. The proposed project would not violate any water quality standards or waste discharge requirements and/or otherwise substantially degrade water quality.	LTS	None required.	NA
Impact HY-2. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level.	LTS	None required.	NA
Impact HY-3. The proposed project would alter the existing drainage pattern of the site but would not result in substantial erosion or siltation onsite or offsite.	LTS	None required.	NA
Impact HY-4. The proposed project would alter the existing drainage pattern of the site but would not result in a substantial increase in the rate or amount of surface runoff in a matter that would result in flooding onsite or offsite.	LTS	None required.	NA
Impact HY-5. The proposed project would not create or contribute runoff water that would exceed the capacity of the planned stormwater drainage system or provide additional sources of polluted runoff.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact HY-6. The proposed project would not place housing within a 100-year flood hazard area. The proposed project may place housing in areas that could be inundated by flooding due to SLR but would not exacerbate the frequency or severity of flooding or cause flooding in areas that otherwise would not be subject to flooding without the project.	LTS	None required.	NA
Impact HY-7: The proposed project would not place structures within a 100-year flood hazard area. The proposed project may place structures in areas that could be inundated by flooding due to SLR but would not exacerbate the frequency or severity of flooding or cause flooding in areas that otherwise would not be subject to flooding without the project.	LTS	None required.	NA
Impact HY-8. The project area is subject to flooding from tsunami inundation, but the project would not exacerbate flooding or cause flooding in areas that otherwise would not be subject to flooding without the project. The project site is not subject to inundation by seiche or mudflows.	LTS	None required.	NA
Impact C-HY-1. Cumulative Water Quality Impacts. The proposed project, in combination with other foreseeable development in the vicinity, would not contribute considerably to cumulative impacts on water quality.	LTS	None required.	NA
Impact C-HY-2. Cumulative Groundwater Impacts. The proposed project, in combination with other foreseeable development in the vicinity, would not contribute considerably to cumulative impacts on groundwater recharge and supplies.	LTS	None required.	NA
Impact C-HY-3. Cumulative Storm Drain Impacts. The proposed project, in combination with other foreseeable development in the vicinity, would not contribute considerably to cumulative impacts on storm drain capacity.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-HY-4. Cumulative Flooding Impacts. The proposed project, in combination with other foreseeable development in the vicinity, would not contribute considerably to cumulative impacts on flooding.	LTS	None required.	NA
Hazardous Materials			
Impact HZ-1. The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	None required.	NA
Impact HZ-2. The proposed project would not create a significant hazard to the public or the environment through the release of hazardous materials.	LTS	None required.	NA
Impact HZ-3. The proposed project would not create a potentially significant hazard for children at nearby schools from the emission or handling of hazardous or acutely hazardous materials.	LTS	None required.	NA
Impact HZ-4. The proposed project would not create a potentially significant hazard for the public or environment related to development of a hazardous materials site included in a list compiled pursuant to Government Code Section 65962.5.	LTS	None required.	NA
Impact HZ-5. The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	None required.	NA
Impact C-HZ-1: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not create a significant hazard to human health and/or the environment involving the management or release of hazardous materials.	LTS	None required.	NA

Environmental Impacts	Level of Significance before Mitigation	Mitigation and Improvement Measures	Level of Significance after Mitigation
Impact C-HZ-2: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not create a significant hazard to human health and/or the environment involving the disturbance of subsurface hazardous materials.	LTS	None required.	NA
Impact C-HZ-3: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not create a potentially significant hazard for children at nearby schools from the emission or handling of hazardous or acutely hazardous materials.	LTS	None required.	NA
Impact C-HZ-4: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not create a potentially significant hazard for the public or environment related to development of a hazardous materials site included in a list compiled pursuant to Government Code Section 65962.5.	LTS	None required.	NA
Impact C-HZ-5: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not impair implementation of or physically interfere with an adopted emergency response or evacuation plan.	LTS	None required.	NA

TABLE S-2. COMPARISON OF SIGNIFICANT IMPACTS OF PROJECT TO IMPACTS OF ALTERNATIVES

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
Description	Construction of up to approximately 2.7 to 2.8 million gross square feet (gsf) of residential, commercial, production, and active/retail uses on Seawall Lot 337, plus 263,000 gsf for the reuse of the existing Pier 48 structure. Total of 1,000 to 1,600 residential uses on Seawall Lot 337. Building heights would range from 90 feet (approximately 6 stories) to a maximum of 240 feet (approximately 23 stories). Includes seismic safety improvements to Pier 48 involving underwater construction activities in San Francisco Bay.	No change to existing conditions.	Mission Rock Square and the Mission Rock Square Garage would not be constructed. In their place, a building (Building K) would be constructed in the middle of Seawall Lot 337. The area where Building K would be located under the proposed project would be an extension of China Basin Park under this alternative.	Pier 48 remains in its existing condition (i.e., no surface or in-water construction activities proposed). No change to proposal for remaining portions of Project Site.
Ability to Meet Project Sponsor's Objectives	Meets all of the sponsor's objectives.	Would not meet any of the sponsor's objectives.	Would achieve most but not all of the sponsor's objectives but to a lesser extent than the proposed project.	Would achieve most but not all of the sponsor's objectives, but to a lesser extent than the proposed project. Would not achieve any of the Pier 48 objectives.
Land Use and Land Use Planning				
	All impacts would be less than significant.	NI <	LS =/<	LS =/<
Aesthetics				
	All impacts would be less than significant.	NI <	LS =/<	LS =/<
Population and Housing				
	All impacts would be less than significant.	NI <	LS =/<	LS =/<
Cultural Resources				
	Impact CP-1. The proposed project, including rehabilitation and reuse of the existing historic Pier 48 structures, in accordance with applicable Secretary of the Interior's Rehabilitation Standards, as well as new construction on Seawall Lot 337, would not have a substantial adverse effect on a historical or potential historical resource. Impacts on	NI <	LS =/<	LS =/<

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	historical resources would be less than significant.			
	Impact CP-2. The proposed project could cause a substantial adverse change in the significance of an archeological resource. Identified mitigation would reduce this impact to less than significant with mitigation.	NI <	LSM =/<	LSM =/<
	Impact CP-3. The proposed project could disturb any human remains, including those interred outside of formal cemeteries. Identified mitigation would reduce this impact to less than significant with mitigation.	NI <	LSM =/<	LSM =/<
	Impact CP-4: The proposed project could result in a substantial adverse change in the significance of a tribal cultural resource. Identified mitigation would reduce this impact to less than significant with mitigation.	NI <	LSM =/<	LSM =/<
	Impact C-CP-1. The proposed project, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on historic resources. However, the proposed project's contribution would not be cumulatively considerable. Impacts would be less than significant.	NI <	LS =/<	LS =/<
	Impact C-CP-2: The proposed project, in combination with future development in the city, would not result in a significant cumulative impact on archeological resources, tribal cultural resources, and human remains. As such, the proposed project's contribution would not be cumulatively considerable.	NI <	LSM =/<	LSM =/<
Transportation and Circulation				
	Impact TR-1: Construction of the proposed project would not result in significant impacts on the transportation and circulation network. Impacts would be less than significant.	NI <	LS <	LS <
	Impact TR-2: The proposed project would not cause substantial additional VMT nor substantially induce automobile travel. Impacts would be less than significant.	NI <	LS =	LS =
	Impact TR-3: The proposed project would result in queues that would create traffic hazards. This impact would be less than significant with mitigation.	NI <	LSM =	LSM =

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact TR-4: The proposed project would result in an adverse impact by increasing ridership by more than 5 percent on two individual Muni routes that exceed 85 percent capacity utilization under baseline conditions. This impact would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact TR-5. The proposed project would not cause significant impacts on regional transit routes. This impact would be less than significant.	NI <	LS =	LS =
	Impact TR-6. The project would result in an adverse impact related to a substantial increase in transit delays on Third Street between Channel Street and Mission Rock Street. This impact would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact TR-7: The proposed project would have a substantial adverse effect on pedestrian travel by creating potentially hazardous conditions for pedestrians adjacent to the Block D2 parking structure. This impact would be less than significant with mitigation.	NI <	LSM =	LSM <
	Impact TR-8: Existing pedestrian facilities on the Third Street Bridge, the Fourth Street Bridge, and the Fourth Street/King Street intersection are sized adequately to accommodate pedestrian traffic generated by the proposed project. This impact would be less than significant.	NI <	LS =	LS =
	Impact TR-9. The proposed project would have significant impacts on pedestrian safety at the unsignalized intersections of Fourth Street/Mission Rock Street and Fourth Street/Long Bridge Street, resulting in significant and unavoidable with mitigation impact.	NI <	SUM =	SUM =
	Impact TR-10: The proposed project would create potentially hazardous conditions for bicyclists and would interfere with bicycle accessibility to the project site or adjoining areas. This impact would be less than significant with mitigation.	NI <	LSM =	LS <

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact TR-11. The proposed project's loading demand during the peak loading hour would not be adequately accommodated by the proposed onsite/off-street loading supply or in proposed on-street loading zones, which may create hazardous conditions or significant delays for transit, bicycles, or pedestrians, resulting in less than significant impacts with mitigation.	NI <	LSM =	LSM =
	Impact TR-12: The proposed project could result in significant impacts on emergency access to the project site or adjacent locations. This impact would be less than significant with mitigation.	NI <	LSM =	LSM =
	Impact TR-13: The proposed project would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and particular characteristics of the proposed project would not render the use of other modes infeasible. This impact would be less than significant.	NI <	LS =	LS =
	Impact C-TR-1, Impact C-TR-2, Impact C-TR-5, Impact C-TR-10, and Impact C-TR-11: Cumulative impacts related to construction, VMT, regional transit routes, emergency vehicle access, and parking would be less than significant.	NI <	LS =	LS =
	Impact C-TR-3. The proposed project would not contribute to a major traffic hazards. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =
	Impact C-TR-4. The proposed project would contribute considerably to a significant cumulative transit impact because it would increase ridership by more than 5 percent on one individual Muni route that would exceed 85 percent capacity utilization. Impacts would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact C-TR-6. The proposed project would contribute considerably to significant cumulative impacts related to transit delay. Impacts would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact C-TR-7. The proposed project would contribute considerably to significant cumulative pedestrian impacts. Impacts would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact C-TR-8. The proposed project would not contribute considerably to a significant cumulative bicycle impact. Impacts would be less than significant with mitigation.	NI <	LSM =	LTS =
	Impact C-TR-9. The proposed project could contribute to a significant cumulative loading impact. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =
Noise				
	Impact NOI-1. Construction of the proposed project would generate noise levels in excess of standards or result in substantial temporary increases in ambient noise levels, resulting in significant and unavoidable impacts with mitigation.	NI <	SUM =	SUM =
	Impact NOI-2: Operation of the proposed project could result in the exposure of persons to or generation of noise levels in excess of the San Francisco Noise Ordinance or a substantial permanent, temporary, periodic or increase in ambient noise levels in the project vicinity, above levels existing without the project. Impacts would be significant and unavoidable.	NI <	SU =	SU =
	Impact NOI-3: Construction of the project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to annoyance. Construction of the project could expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to damage to buildings.	NI <	SUM =	SUM =
	Impact C-NOI-1: Construction activities for the proposed project, in combination with other past, present, and reasonable future projects in the city, would result in a substantial temporary increase in noise or noise in excess of the applicable local standards. Cumulative impacts would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact C-NOI-2: Construction activities associated with project-related development, in combination with other past, present, and reasonable future projects in the city, would expose sensitive receptors to excessive ground-borne vibration related to annoyance and could result in similar impacts related to damage to buildings.	NI <	SUM =	SUM =

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact C-NOI-3: Operation of the proposed project, in combination with other past, present and reasonable future projects in the city, would result in in the exposure of persons to noise in excess of the applicable local standards or a substantial permanent ambient noise level increase in the project vicinity. Impacts would be significant and unavoidable.	NI <	SU =	SU =
Air Quality				
	Impact AQ-1: Construction of the proposed project would generate fugitive dust and criteria air pollutants, which for criteria air pollutants but not fugitive dust, 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. Impacts would be significant and unavoidable with mitigation for criteria air pollutants.	NI <	SUM =	SUM =
	Impact AQ-2. During project operations, the proposed project would result in emissions of criteria air pollutants 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. Impacts would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact AQ-3. During combined project construction and operations, the proposed project would result in emissions of criteria air pollutants 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. Impacts would be significant and unavoidable with mitigation.	NI <	SUM =	SUM =
	Impact AQ-4. Construction and operation of the proposed project would generate toxic air contaminants, including diesel particulate matter, and could expose sensitive receptors to substantial air pollutant concentrations. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact AQ-5. The proposed project would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan. This impact would be less than significant with mitigation.	NI <	LSM =	LSM =
	Impact AQ-6: The project would not result in significant exposure of sensitive receptors to asbestos during demolition activities. This impact would be less than significant.	NI <	LS =/<	LS =/<
	Impact AQ-7: The proposed project would not create objectionable odors that would affect a substantial number of people. This impact would be less than significant.	NI <	LS =/<	LS =/<
	Impact C-AQ-1. The proposed project's construction and operation, in combination with other past, present and reasonable future projects would contribute to cumulative regional air quality impacts. Impacts would be significant and unavoidable with mitigation.	NI <	SUM =/<	SUM =/<
	Impact C-AQ-2. The proposed project's construction and operation, in combination with other past, present and reasonable future projects, could generate toxic air contaminants, including diesel particulate matter, but would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant with mitigation.	NI <	LSM =/<	LSM =/<
	Impact C-AQ-3: The proposed project's construction and operation, in combination with other past, present and reasonable future projects, would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan. This impact would be less than significant with mitigation.	NI <	LSM =/<	LSM =/<
	Impact C-AQ-4: The proposed project's construction, in combination with other past, present and reasonable future projects, would not expose sensitive receptors to asbestos during demolition activities. This impact would be less than significant.	NI <	LS =/<	LS =/<

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact C-AQ-5. The proposed project's construction, in combination with other past, present and reasonable future projects, would not create objectionable odors that would affect a substantial number of people. This impact would be less than significant.	NI <	LS =/<	LS =/<
Greenhouse Gas Emissions				
	Impact GG-1. The proposed project would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHG emissions. Impacts would be less than significant.	NI <	LS =/<	LS =/<
Wind/Shadow				
	Impact WS-1. The project would alter wind in a manner that would substantially affect public areas, and impacts would be significant and unavoidable with mitigation.	NI <	SUM =/<	SUM =
	Impact WS-2: The project would not create new shadow in a manner that would substantially affect outdoor recreation facilities or public areas and impacts would be less than significant.	NI <	LS =/<	LS =
	Impact C-WS-1: The project, in combination with past, present, and reasonably foreseeable future project, would alter wind in a manner that would substantially affect public areas, and impacts would be significant and unavoidable with mitigation.	NI <	SUM =/<	SUM =
	Impact C-WS-2: The project, in combination with past, present, and reasonably foreseeable future project, would not create new shadow in a manner that would substantially affect outdoor recreational facilities of public areas, and impacts would be less than significant.	NI <	LS =/<	LS =/<
Public Services and Recreation				
	All impacts would be less than significant.	NI <	LS =/<	LS =/<

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
Utilities and Service Systems				
	All impacts would be less than significant	NI <	LS =/<	LS =/<
Biological Resources				
	Impact BI-1 and Impact BI-4: Water quality impacts on candidate, sensitive, or special-status species and impacts related to the movement of any native resident or migratory fish or wildlife species, or established native resident or migratory wildlife corridors, would be less than significant.	NI <	LS =/<	LS =/<
	Impact BI-2. Changes in shading and habitat at Pier 48 would not result in a substantial adverse effect on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS. Impacts would be less than significant.	NI <	LS =/<	NI <
	Impact BI-3: Impact pile driving and vibratory driving and extraction from construction of Pier 48 seismic upgrades could have a substantial adverse effect on fish and marine mammal species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS. Impacts would be less than significant with mitigation.	NI <	LSM =	NI <
	Impact BI-5: Construction of the proposed project could affect migratory nesting birds. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =
	Impact BI-6: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Impacts would be less than significant.	NI <	LS =	LS =
	Impact C-BI-1, Impact C-BI-2, and Impact C-BI-4: Cumulative water quality impacts on candidate, sensitive, or special-status species and impacts related to the movement of any native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, or future development in the city may result in shading would be less than significant.	NI <	LS =	LS =

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
	Impact C-BI-3: The proposed project, in combination with future development in the city, would not result in permanent noise from pile driving and have a substantial adverse effect on a fish species or marine mammals identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW, NMFS, or USFWS. Impacts would be less than significant with mitigation.	NI <	LSM =	NI <
	Impact C-BI-5: Construction of the proposed project, in combination with future development in the city, could affect nesting birds. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =
	Impact C-BI-6: The proposed project, in combination with future development in the city, would not result in a considerable contribution to significant cumulative impacts on local policies or ordinances to protect biological resources, such as a tree preservation policy or ordinance. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =
Geology and Soils				
	Impact GE-1a, Impact GE-1b, Impact GE-1c, Impact GE-2, Impact GE-3, and Impact GE-4: Impacts related to rupture of a known earthquake fault, strong seismic ground shaking, ground failure or liquefaction, soil erosion, expansive soils, lateral spreading, or the loss of topsoil would be less than significant.	NI <	LS =/<	LS =/<
	Impact GE-5. The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =
	Impact C-GE-1, Impact CE-2, Impact C-GE-3: Cumulative impacts related to rupture of a known earthquake fault, strong seismic ground shaking, ground failure or liquefaction, soil erosion, expansive soils, lateral spreading, or the loss of topsoil would be less than significant.	NI <	LS =/<	LS =/<
	Impact C-GE-4. The proposed project, in combination with other development within the city, could result in impacts to paleontological resources. However, the project's contribution would be less than cumulatively considerable. Impacts would be less than significant with mitigation.	NI <	LSM =	LSM =

	Proposed Project	Alternative A: No Project Alternative	Alternative B: Reduced Height/Intensity Alternative	Alternative C: No Change to Pier 48 Alternative
Hydrology and Water Quality				
	All impacts would be less than significant.	NI <	LS =/<	LS =/<
Hazards/Hazardous Materials				
	All impacts would be less than significant.	NI <	LS =/<	LS =/<

1. INTRODUCTION

This chapter presents a summary of the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project), outlines the purpose of this Environmental Impact Report (EIR), summarizes the environmental review process, and describes the organization of the EIR.

A. PROJECT SUMMARY

The project sponsor (Seawall Lot 337 Associates, LLC) for the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project) proposes a mixed-use, multi-phase development at Seawall Lot 337; rehabilitation and reuse of Pier 48; and construction of approximately 5.4 acres of net new open space, for a total of 8.0 acres of open space on the project site.[1] In addition, approximately 1.1 million gross square feet (gsf) of parking would be provided in two public parking garages, one above grade and one underground. The proposed project would also include public access areas, assembly areas, and an internal grid of public streets, shared streets, and utilities infrastructure. Overall, the proposed project would involve construction of up to 2.7 to 2.8 million gsf of residential, commercial, production, active/retail, and parking uses on 11 proposed development blocks on Seawall Lot 337 plus rehabilitation of approximately 261,000 gsf of Pier 48. The Port of San Francisco (Port) owns the entire project site.

On Seawall Lot 337, the project sponsor proposes a mix of residential, commercial, active/retail, production, and parking uses. The 11 proposed development blocks would be divided into "zones" that would define permitted uses on the lower floors as active/retail,[2] production, commercial, or residential. Above the lower-floor space, the project sponsor proposes primarily residential uses on four blocks, primarily commercial uses on four blocks, a parking structure on one block[3], and flexible zoning controls that would allow for development of either commercial or residential as the predominant use on the three other blocks. The 11 blocks on Seawall Lot 337 would be developed to include the following mix of uses: approximately 1.1 to 1.6 million gsf of residential uses (estimated at 1,000 to 1,600 units), consisting of both market-

[1] Acreages and square footages used herein are approximate.

[2] For purposes of this document, *commercial* uses include office, research and development (R&D)/biotech, labs, institutional, medical, and other similar nonretail uses. *Active/retail* uses are included under their own use category and include shops, restaurants, entertainment venue uses, and any other uses that by their nature do not require non-transparent walls facing a public street or involve the storage of goods or vehicles. Production uses are those uses that support the production or fabrication of goods, such as handicrafts, art, consumable goods, clothing, or furniture. These definitions are different from those found in the San Francisco Planning Code.

[3] The garage would be included within a residential use block.

rate and affordable housing; approximately 972,000 to 1.4 million gsf of commercial uses; approximately 241,000 to 244,800 gsf of active/retail and production uses on the lower floors of the blocks; and enclosed parking. As noted above, total development on Seawall Lot 337 would not exceed 2.7 to 2.8 million gsf, not including the parking garages.

In total, the proposed project would provide approximately 3,100 parking spaces, 2,300 spaces within the above-grade parking structure, 700 spaces in an underground parking garage below Mission Rock Square, and up to 100 spaces below grade, at grade, or above grade within the proposed buildings (up to 10 spaces per block). The 11 blocks on Seawall Lot 337 could be developed with building heights ranging from 90 feet (approximately seven stories) to a maximum of 240 feet (approximately 23 stories) for the tallest building, excluding the mechanical and other accessory penthouse roof enclosures, which could extend up to 20 feet (40 feet on Block F) above the roofline.

Pier 48 is proposed to be rehabilitated and reused as an industrial use, specifically analyzed as a proposed brewery, under an interim lease with the Port. The rehabilitation and reuse of Pier 48 would include approximately 242,500 gsf[4] of industrial, restaurant, active/retail, tour, and exhibition uses as well as meeting space within the existing structures and valley. Public access would be provided on the rehabilitated aprons, with the potential for expanded maritime uses for recreational/boat launch and other Port maritime tenants. Prior to being developed, Pier 48 would continue to be used on an interim basis for storage, exhibit, and event parking uses. Existing maritime uses on the aprons could also continue prior to rehabilitation of Pier 48.

B. PURPOSE OF THIS ENVIRONMENTAL IMPACT REPORT

This Draft EIR for the project has been prepared by the project's lead agency, the City and County of San Francisco (City), in conformance with the provisions of the California Environmental Quality Act (CEQA) statute and CEQA Guidelines. The lead agency is the public agency with principal responsibility for carrying out or approving a project.

This Draft EIR assesses potentially significant impacts that could result from the proposed project. 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.

[4] The increase in square footage compared to existing conditions (261,000 gsf) is due to construction of a mezzanine in Shed A.

As stated in the CEQA Guidelines, an EIR is an "informational document." It is intended to inform public agency decision-makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to a project. Similarly, the purpose of this Draft EIR is to provide the City, responsible and trustee agencies, other public agencies, and the public with detailed information about the environmental effects that could result from implementing the proposed project; examine and set forth feasible methods of mitigating any adverse environmental impacts should the proposed project be approved; and consider feasible alternatives to the project. The City will use the EIR, along with other information in the public record, to determine whether to approve, modify, or deny the proposed project and specify any applicable environmental conditions or mitigation measures as part of the project approvals.

C. ENVIRONMENTAL REVIEW PROCESS

The San Francisco Planning Department, serving as lead agency responsible for administering the environmental review for the proposed project, determined that preparation of an EIR was required.

CEQA requires that, before a decision can be made to approve a project that could result in adverse physical effects, an EIR must be prepared that fully describes the environmental effects of the project. The EIR is a public information document for use by governmental agencies and the public that identifies and evaluates the potential environmental impacts of a project, recommends mitigation measures to lessen or eliminate significant adverse impacts, and examines feasible alternatives to a project. The information contained in the EIR must be reviewed and considered by the Planning Commission, Board of Supervisors, and other approving bodies prior to a decision to approve, disapprove, or modify a project.

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

NOTICE OF PREPARATION

An environmental evaluation (EE) application was submitted to the Planning Department on May 31, 2013. The filing of the EE application initiated the environmental review process. The City released a notice of preparation (NOP) (included as Appendix 1 of this document) to notify the public that it intended to prepare an EIR for the proposed project on December 11, 2013. In

addition to providing a project description, a map with the project location, and a summary of potential environmental issues related to project implementation, the NOP provided information about the public scoping meeting, which was held on January 13, 2014, in the Bayside Room at the Port of San Francisco, Pier 1, The Embarcadero. The purpose of this meeting and publication of the NOP was to solicit comments regarding the scope of the EIR.

The NOP requested agencies and other interested parties to comment on environmental issues that should be addressed in the EIR. The comment letters received in response to the NOP are available for review as part of Case File No. 2013.0208E at the Planning Department offices at 1650 Mission Street, Suite 400, San Francisco. In general, comments on the NOP and comments received at the public scoping meeting requested that the EIR analyze the following issues, which are addressed in the EIR sections identified in parentheses:

- Consistency of the proposed project with Mission Bay Plan, the San Francisco Waterfront Plan, and the Mission Bay development guidelines (Chapter 3, *Plans and Policies,* and Section 4.A, *Land Use and Land Use Planning*).
- Potential impacts along specific viewpoints, the waterfront, and surrounding areas. The scale of the proposed project, height of the project, and the future use of Parcel P20 (Section 4.B, *Aesthetics*).
- Provision of affordable housing and population density (Section 4.C, *Population and Housing*).
- Potential impacts on submerged cultural resources in the project area (Section 4.D, *Cultural Resources*).
- Increases in traffic and traffic congestion, connections to the city's transportation network, lack of public transportation in the area, pedestrian safety, traffic during game days, fair-share contributions, and potential impacts of increased traffic on emergency vehicle delay (Section 4.E, *Transportation and Circulation*).
- Potential noise impacts from additional residents (Section 4.F, *Noise*).
- Potential greenhouse gas (GHG) impacts, adequate mitigation measures, and inclusion of a GHG emissions analysis consistent with Assembly Bill 32, the California Global Warming Solutions Act (Section 4.H, *Greenhouse Gas Emissions*).
- Potential shadow impacts along the waterfront, China Basin Park, and Mission Rock Square (Section 4.I, *Wind and Shadow*).
- Potential impacts on loss of green space, and preservation of public lands for public and recreational use (Sections 4.E, *Transportation and Circulation* and 4.J, *Public Services and Recreation*).
- Adequacy of water and sewer systems with the addition of the proposed project, including a Water Supply Assessment (Section 4.K, *Utilities and Service Systems*).

- Potential impacts on the marine environment, as well as state- and federally listed species, and pile-driving impacts on fish, birds, and mammals (Section 4.L, *Biological Resources*).

DRAFT EIR IMPACT ANALYSIS

This Draft EIR analyzes significant effects that could result from the proposed project. As explained in Section 15002(g) of the CEQA Guidelines, a significant effect on the environment is defined as a substantial adverse change in the physical conditions that exist in the area affected by a project. Pre-project environmental conditions (the environmental baseline) are considered in determining impact significance. The impact significance thresholds for each environmental resource area presented in this Draft EIR are based on guidance from the San Francisco Planning Department's Environmental Planning Division and generally based on CEQA Guidelines Appendix G, Environmental Checklist Form. In addition, this Draft EIR uses City-adopted significance criteria for traffic, energy, and wind and shadow impacts. Where significant impacts are identified, the Draft EIR recommends feasible mitigation measures to reduce, eliminate, or avoid the significant impacts and identifies which significant impacts are unavoidable. Cumulative impacts (i.e., two or more individual effects that, when considered together, compound or increase other related environmental impacts) are discussed for each environmental resource area. This document also discusses variants and alternatives to the proposed project in Chapter 6, *Variants*, and Chapter 7, *Alternatives*.

In accordance with Section 15143 of the CEQA Guidelines, this Draft EIR provides an analysis of the significant effects on the environment that could result from construction and operation of the proposed project. Section 15131 of the CEQA Guidelines specifies that "the intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." Therefore, this Draft EIR does not treat the economic or social effects of the proposed project as significant effects on the environment, unless they result in physical changes to the environment. In addition, if it is determined that a potential impact is too speculative for evaluation, this condition is noted, and further discussion of the impact is not necessary.

D. PUBLIC PARTICIPATION

PUBLIC REVIEW OF DRAFT EIR

The CEQA Guidelines and Chapter 31 of the San Francisco Administrative Code encourage public participation in the planning and environmental review processes. The City will provide opportunities for the public to present comments and concerns regarding the CEQA and planning processes. These opportunities will occur during the Draft EIR public review and comment period and the public hearings before the San Francisco Planning Commission.

The Draft EIR and notice of availability (NOA) are posted electronically on the City's website (http://sf-planning.org/environmental-impact-reports-negative-declarations), and hard copies are available for public review by request at the Planning Information Center, 1650 Mission Street, San Francisco. Written public comments may be submitted to the Planning Department during the specified public review and comment period (indicated on the cover of this EIR), and oral comments may be presented at the Draft EIR public hearing before the Planning Commission.

Written comments should be submitted to Tania Sheyner, Senior Environmental Planner, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103. Comments may also be submitted by email to tania.sheyner@sfgov.org. Comments must be received by 5:00 p.m. on June 12, 2017.

Commenters are not required to provide personal identifying information. All written and 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 Planning Department's website or in other public documents.

Only commenters on the Draft EIR will be permitted to file an appeal regarding certification of the Final EIR to the Board of Supervisors.

FINAL EIR AND PROJECT APPROVAL

Following the close of the public review period, the City will prepare responses to all substantive comments that relate to potential physical changes to the environment. The Draft EIR, along with the responses to written and oral substantive comments received during the review period, will make up the Final EIR and will be considered by the Planning Commission and Board of Supervisors in making the decision whether to certify the Final EIR and approve or deny the project.

If the Planning Commission, Board of Supervisors, or other City entity approves the project as described in the Final EIR, it would be required to adopt CEQA findings and a mitigation monitoring and reporting program (MMRP) to ensure proper implementation of mitigation measures identified in the Final EIR. Consistent with CEQA Guidelines Section 15097, the MMRP is designed to ensure implementation of the mitigation measures identified in the Final EIR and adopted by decision-makers to mitigate or avoid the proposed project's significant environmental effects. CEQA also requires the adoption of findings prior to approval of a project for which a certified EIR identifies significant environmental effects (CEQA Guidelines Sections 15091 and 15092). Because this EIR identifies significant adverse impacts that cannot be mitigated to less-than-significant levels, the findings must include a Statement of Overriding Considerations for those impacts (CEQA Guidelines Section 15093[b]) in order for the proposed project to be approved. The project sponsor would be required to implement the MMRP as a condition of project approval.

E. INTENDED USES OF THIS EIR

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.

This EIR is an informational document that evaluates the proposed project and the potential for significant impacts on the environment, examines methods of reducing adverse environmental impacts, identifies any significant and unavoidable adverse impacts that cannot be mitigated, and identifies reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental effects or reduce the impacts to a less-than-significant level. The lead agency is required to consider the information in the EIR, along with any other relevant information, in making its decisions on the proposed project. This analysis, in and of itself, does not determine whether a project will be approved but aids the planning and decision-making process by disclosing the potential for significant and adverse impacts.

In conformance with CEQA and the CEQA Guidelines, this EIR provides objective information that addresses the environmental consequences of the proposed project and identifies possible means of reducing or avoiding significant impacts, through either mitigation measures or feasible project alternatives. The City must certify the Final EIR prior to acting on the project approval application for the proposed project. Under CEQA Guidelines Section 15161, this is a project-level EIR. This most common type of EIR examines the environmental impacts of a project and focuses primarily on changes in the environment that would result from project development. This type of EIR examines all phases of a project, including planning, construction, and operation.

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

- **Informational Document.** An EIR is an informational document that informs public agency decision-makers and the public generally of the significant environmental effect(s) of a project, identifies possible ways to minimize significant effects, and describes reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information that may be presented to the agency (CEQA Guidelines Section 15121(a)).
- **Degree of Specificity.** The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity, which is described in the EIR. An EIR on a development project will necessarily be more detailed in its discussion of specific effects of the project than an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy (CEQA Guidelines Section 15146(a)).

- **Standards for Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a 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).

Section 15382 of the CEQA Guidelines defines a significant effect on the environment as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project…" Therefore, in identifying the significant impacts of the proposed project, this EIR focuses on the substantial physical effects and mitigation measures to avoid, reduce, or otherwise alleviate those effects.

F. REPORT ORGANIZATION

This Draft EIR is organized into the following sections:

- *Executive Summary*: This chapter summarizes the EIR by providing a concise overview of the proposed project, including associated approvals, environmental impacts that would result from the project, mitigation measures identified to reduce or eliminate these impacts, and project alternatives.
- *Chapter 1—Introduction*: This chapter includes a discussion of the environmental review process, a summary of the comments received on the scope of the EIR, and the organization of the EIR.
- *Chapter 2—Project Description*: This chapter discusses the background and objectives of the proposed project, provides background data on the project location, describes the operational and physical characteristics of the project, and identifies project approvals.
- *Chapter 3—Plans and Policies:* This chapter provides a summary of the plans, policies, and regulations of the City and County of San Francisco that are applicable to the proposed project.
- *Chapter 4—Environmental Setting and Impacts*: This chapter describes the existing setting, environmental project-level impacts, cumulative impacts, and mitigation measures and improvement measures (if applicable). Each environmental topic is discussed in a separate section within this chapter, as follows:

4.A	Land Use and Land Use Planning	4.I	Wind and Shadow
4.B	Aesthetics	4.J	Public Services and Recreation
4.C	Population and Housing	4.K	Utilities and Service Systems
4.D	Cultural Resources	4.L	Biological Resources
4.E	Transportation and Circulation	4.M	Geology and Soils
4.F	Noise	4.N	Hydrology and Water Quality
4.G	Air Quality	4.O	Hazards and Hazardous Materials
4.H	Greenhouse Gas Emissions		

- *Chapter 5—Other CEQA Considerations*: This chapter provides additional, specifically required analyses of the proposed project's effects, growth-inducing impacts, significant unavoidable impacts, areas of known controversy, and issues to be resolved.
- *Chapter 6 – Variants:* Describes and analyzes the four variants to the proposed project, including the District Energy/Bay-Source Heating and Cooling Variant, Entertainment Venue Variant, Reconfigured Parking Variant, and Hotel Use Variant.
- *Chapter 7—Alternatives*: Evaluates two alternatives to the proposed project, in addition to the No-Project Alternative, and explains why various other alternatives that were considered were not carried forward for detailed evaluation. The alternatives evaluated in this section include the No-Project Alternative, the Reduced Intensity Alternative, and the No Change to Pier 48 Alternative.
- *Chapter 8—Report Preparers:* This chapter lists the authors who contributed to the EIR, including the City staff, EIR authors, and EIR consultants.
- *Appendices*: The following appendices are included as part of this document:
  - Appendix 1: Notice of Preparation and Comments Received
  - Appendix 2: Draft Design Controls
  - Appendix 3-1: Historic Resources Evaluation
  - Appendix 3-2: Historic Resources Evaluation Response
  - Appendix 3-3: Geoarcheological Assessment
  - Appendix 3-4: Preliminary Archeological Review
  - Appendix 4-1: Transportation Impact Analysis and Technical Appendices
  - Appendix 4-2: Transit Line Capacity Calculations
  - Appendix 4-3: Trip Generation Rates for Each Land Use
  - Appendix 4-4: Travel Demand Memo

- Appendix 4-5: Draft Transportation Demand Management Plan
- Appendix 5: Noise Technical Memorandum
- Appendix 6-1: CO Screening Memorandum
- Appendix 6-2: Air Quality Technical Report and Technical Appendices
- Appendix 7-1: Wind Study
- Appendix 7-2: Shadow Study
- Appendix 8-1: Water Supply Assessment
- Appendix 8-2: Draft Mission Rock Infrastructure Plan
- Appendix 9: Biological Resources
- Appendix 10: Hazards and Hazardous Materials
- Appendix 11: Variants Technical Data
- Appendix 12: Alternatives Technical Data

2. PROJECT DESCRIPTION

A. PROJECT OVERVIEW

The 28-acre project site consists of Assessor's Block 8719/Lot 002, Block 8719/Lot 006, and Block 9900/Lot 048 and the following: the 14.2-acre Seawall Lot 337; the 0.3-acre strip of land on the south side of Seawall Lot 337, referred to as Parcel P20[1] (see below); the 6.0-acre Pier 48; the existing 2.2-acre China Basin Park; and 5.4 acres of streets and access areas within or adjacent to the boundaries of Seawall Lot 337 and Pier 48. The project site is adjacent to the Mission Bay neighborhood of the city and the Mission Bay South Redevelopment Plan area.

The project sponsor (Seawall Lot 337 Associates, LLC) of the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project) proposes a mixed-use, multi-phase development at Seawall Lot 337; rehabilitation and reuse of Pier 48; and construction of approximately 5.4 acres of net new open spaces, for a total of 8.0 acres of open space on the project site.[2] In addition, approximately 1.1 million gross square feet (gsf) of parking would be provided in two public parking garages, one above grade and one below grade. The proposed project would also include public access areas, assembly areas, and an internal grid of public streets, shared streets,[3] and utilities infrastructure. Overall, the proposed project would involve construction of up to 2.7 to 2.8 million gsf of residential, commercial, production, active/retail, and parking uses on 11 proposed development blocks on Seawall Lot 337, plus rehabilitation of approximately 261,000 gsf of Pier 48 for reuse. The Port of San Francisco (Port) owns the entire project site.

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1 The project sponsor's proposal includes a portion of Parcel P20 as part of the project site. Parcel P20, along the southern edge of Seawall Lot 337, is owned by the Port of San Francisco. Parcel P20 is part of the Mission Bay South Redevelopment Plan area and subject to a lease option in favor of the Office of Community Investment and Infrastructure as the Successor Agency to the San Francisco Redevelopment Agency. The redevelopment plan obligated the Mission Bay developer to realign Mission Rock Street, located at the southern edge of P20, from a diagonal configuration to an east-west street. Under Assembly Bill 2797 (stats. 2016, ch. 529) (AB 2797), the legislature authorized OCII and the SF Board of Supervisors to remove Parcel P20 from the redevelopment plan without further state approvals. Local approvals to include portions of Parcel P20 in Seawall Lot 337 will be among the project approvals. Except where indicated otherwise, references in this document to Seawall Lot 337 include portions of Parcel P20. As part of the project, most of Parcel P20 would be merged into Seawall Lot 337, with the balance remaining in adjacent right-of-ways.

2 Acreages and square footages used herein are approximate.

3 Public streets are typical streets with clear delineations between vehicles, bicycles, and pedestrians. Shared streets are public right-of-ways designed for pedestrian use that permit vehicles and bicycles to share the right-of-way. The design emphasize their pedestrian and public open space character to differentiate them from public streets.

On Seawall Lot 337, the project sponsor proposes a mix of residential, commercial, active/retail, production, and parking uses. The 11 proposed development blocks would be divided into "zones" that would define permitted uses on the lower floors as residential, commercial, active/retail,[4] or production. Above the lower-floor space, the project sponsor proposes primarily residential uses on four blocks, primarily commercial uses on four blocks, a parking structure on one block, and flexible zoning controls that would allow for the development of either commercial or residential as the predominant use on three remaining blocks. The 11 blocks on Seawall Lot 337 would be developed to include the following mix of uses: approximately 1.1 to 1.6 million gsf of residential uses (estimated at 1,000 to 1,600 residential units), consisting of both market-rate and affordable housing; approximately 972,000 to 1.4 million gsf of commercial uses; approximately 241,000 to 244,800 gsf of active/retail and production uses on the lower floors of the blocks; and enclosed parking. As noted above, total development on Seawall Lot 337 would not exceed 2.7 to 2.8 million gsf, not including the parking garages.

In total, the proposed project would provide approximately 3,100 parking spaces: 2,300 spaces within the above-grade parking structure on Block D, 700 spaces in a below-grade parking garage under Mission Rock Square, and up to 100 spaces below grade, at grade, or above grade within the proposed buildings (up to approximately 10 spaces per building). The 11 blocks on Seawall Lot 337 could be developed with building heights ranging from 90 feet (approximately 7 stories) to a maximum of 240 feet (approximately 23 stories) for the tallest building, excluding the mechanical and other accessory penthouse roof enclosures. The tops of upper buildings (towers) may extend up to 20 feet (40 feet on Block F) vertically above the maximum designated building height.

Pier 48 is proposed to be rehabilitated and reused as an industrial use, specifically analyzed as a proposed brewery use, under a lease with the Port. The rehabilitation and reuse of Pier 48 would include approximately 242,500 gsf of industrial, restaurant, active/retail, tour, and exhibition uses as well as meeting space within the existing structures and valley. Public access would be provided on the rehabilitated aprons, with the potential for expanded maritime uses for recreational/boat launch and other Port maritime tenants. Prior to being developed, Pier 48 could continue to be used on an interim basis for other uses, such as storage, exhibit, and event parking uses. Existing maritime uses on the aprons could also continue prior to rehabilitation of Pier 48.

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[4] For purposes of this document, *commercial* uses include office, research and development (R&D)/biotech, labs, institutional, medical, and other similar nonretail uses. *Active/retail* uses are included under their own use category and include shops, restaurants, entertainment venues, and any other uses that by their nature do not require nontransparent walls facing a public street or involve the storage of goods or vehicles. *Production uses* are those uses that support the production or fabrication of goods, such as handicrafts, art, consumable goods, clothing, and furniture. These definitions are different from those found in the San Francisco Planning Code.

The proposed project would result in a total of approximately 8.0 acres of new and expanded parks, open space areas, and shoreline access areas. The new or expanded open space areas would include China Basin Park and a waterfront promenade, Mission Rock Square, Channel Lane, Channel Wharf, Pier 48 aprons, and pedestrian paseos. These areas would be connected by a network of pedestrian-oriented public streets.

B. PROJECT SPONSOR'S OBJECTIVES

The project sponsor has identified the following proposed project objectives:

PROJECT-WIDE OBJECTIVES

- Create a new waterfront neighborhood to serve Mission Bay and the Central Waterfront, inviting diverse public use and access to San Francisco Bay (Bay) by creating lively streets and parks and a distinctive design for living and working; preserve and rehabilitate Pier 48; and retain an authentic waterfront character.
- Set high standards for site-wide environmental sustainability, preparing for long-term site resiliency and setting high sustainability goals for the new buildings.
- Provide sufficient density and intensity for development and programmatic uses to achieve a vibrant all-day, all-season destination and, at the same time, meet the financial requirements of site preparation and the construction of affordable housing, streets, sidewalks, plazas, parks, sewers, water systems, and other utility and infrastructure systems.
- Develop parks and open spaces in a manner that complements and adds variety to the adjacent Mission Bay neighborhood, with multiple spaces that are usable and welcoming in all seasons. This includes maximizing the number of buildings fronting on open spaces or parks by developing the project around waterfront parks and a central open space square that (1) can accommodate assembly and special-event uses, (2) is connected to other open space areas by a network of pedestrian-oriented streets, and (3) is surrounded by interactive ground-floor spaces that maximize circulation between active/retail ground-floor uses and exterior spaces.
- Develop and provide access for area residents and visitors to an inviting waterfront promenade segment of the Bay Trail/Blue Greenway through design of a bicycle, pedestrian, and transit-oriented community with well-designed parks, pedestrian-friendly streets, walkable blocks, and links to open spaces, taking advantage of the project site's unique proximity to Mission Creek, AT&T Park, and the Bay Bridge and

the opportunity to expand and enhance the existing China Basin Park while also preserving access from Terry A. Francois Boulevard for industrial uses at Pier 48 and adjacent piers.[5]

- Provide amenities to a wide variety of people, such as Mission Bay residents/families, project residents, ballpark patrons, and employees of and visitors to UCSF and other area facilities and employment centers. The amenities would include, but are not limited to, parks, open space, recreation and entertainment opportunities, and a variety of retail and restaurant uses as well as a neighborhood focal point that provides appropriate amenities and active and vibrant public gathering spaces.
- Develop buildings and a pattern of blocks that add variety to the adjacent Mission Bay neighborhood, with varied form, scale, design character, and site-wide activity at ground-floor levels.
- Offer a mix of residential unit types, sizes, and levels of affordability to serve a diverse pool of potential residents.
- Add to the job-producing capacity of this site with diverse commercial/office building offerings, retail and service tenant spaces, and maker spaces for local artisans and entrepreneurs.
- Generate substantial incremental revenue to the Port for waterfront needs, which include preserving historic piers and other historic structures, constructing and maintaining waterfront plazas, and establishing open space, consistent with public trust requirements.
- Address the ongoing need for parking to serve AT&T Park patrons by replacing the existing Seawall Lot 337 surface parking with visitor and site-serving parking structures that address parking demand by ballpark patrons, working in combination with area street parking and other area structured parking resources.
- Optimize opportunities for sustainable transportation by encouraging walking, bicycling, and transit use and discouraging single-occupancy drivers and automobile use while ensuring minimum parking needs are met for site users and ballpark visitors.

[5] As discussed in more detail below, the Blue Greenway is a City-sponsored project, dedicated to planning and creating a public open space and water access network in southeastern San Francisco, from Mission Creek to the southern San Francisco county line. The Blue Greenway is being designed and developed jointly by the Port of San Francisco, the Office of Community Investment and Infrastructure, San Francisco Recreation and Parks Department, and the California State Parks Department. These agencies are working cooperatively with the San Francisco Planning Department, the Department of Public Works, the Municipal Transportation Agency, and the Mayor's Office of Economic and Workforce Development.

SPECIFIC OBJECTIVES – SEAWALL LOT 337

- Develop a mixed-used project on Seawall Lot 337, including sufficient residential density and commercial, parking, retail, open space, and related programmatic uses that will attract a diverse mix of workers, visitors, and residents and create a vibrant place that is active throughout the day, in the evenings, and on weekends.
- Provide sufficient flexibility and balance in the development program and a variety of building types, urban forms, heights, and floor plate sizes within the framework of an overall development plan to create an active mixed-use neighborhood.
- Design parking structures, to the extent feasible, to minimize conflicts between vehicles entering or exiting structures and area circulation, including bicyclists, pedestrians, or transit.
- Ensure that parking facilities and management strategies, in addition to serving onsite uses and AT&T Park patrons, support city-wide transportation plan strategies and goals to capture vehicle traffic coming into the city and transition the user to sustainable transportation modes, including Muni, Central Subway, and the T-Line.
- Encourage building forms that contribute to the beauty and variety of the city skyline, are placed to protect and promote public views of the Bay from various San Francisco neighborhoods, provide a transition in building heights by stepping down from Third Street toward the waterfront, and mark key destinations along the waterfront.
- Program lower floors of buildings with engaging retail and other active uses that serve and complement adjacent public spaces, meet the needs of the neighborhood, and accommodate artisan and other local business opportunities.
- Phase the construction of public infrastructure and facilities onsite to coordinate with the development of buildings.
- Implement a multi-faceted, coordinated resiliency strategy for Seawall Lot 337 that is responsive to the growing knowledge of sea-level rise, climate events, and the benefits of coordinated, sustainable utility systems.

PIER 48 OBJECTIVES

- Reuse and rehabilitate Pier 48, a contributing resource in the Embarcadero Historic District, with a mix of uses, such as industrial, commercial, visitor-oriented restaurant, retail, tour, exhibit, meeting space, entertainment, parking, and recreational uses, while preserving its historic fabric.

- Provide opportunity for both maritime and public access on the pier's aprons, to the extent feasible, in a manner that complements and enhances the public use and enjoyment of the proposed China Basin Park and that is consistent with public trust requirements.
- Comply with the Secretary of the Interior's Standards for the Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (the SOI Rehabilitation Standards and the SOI Guidelines, respectively).

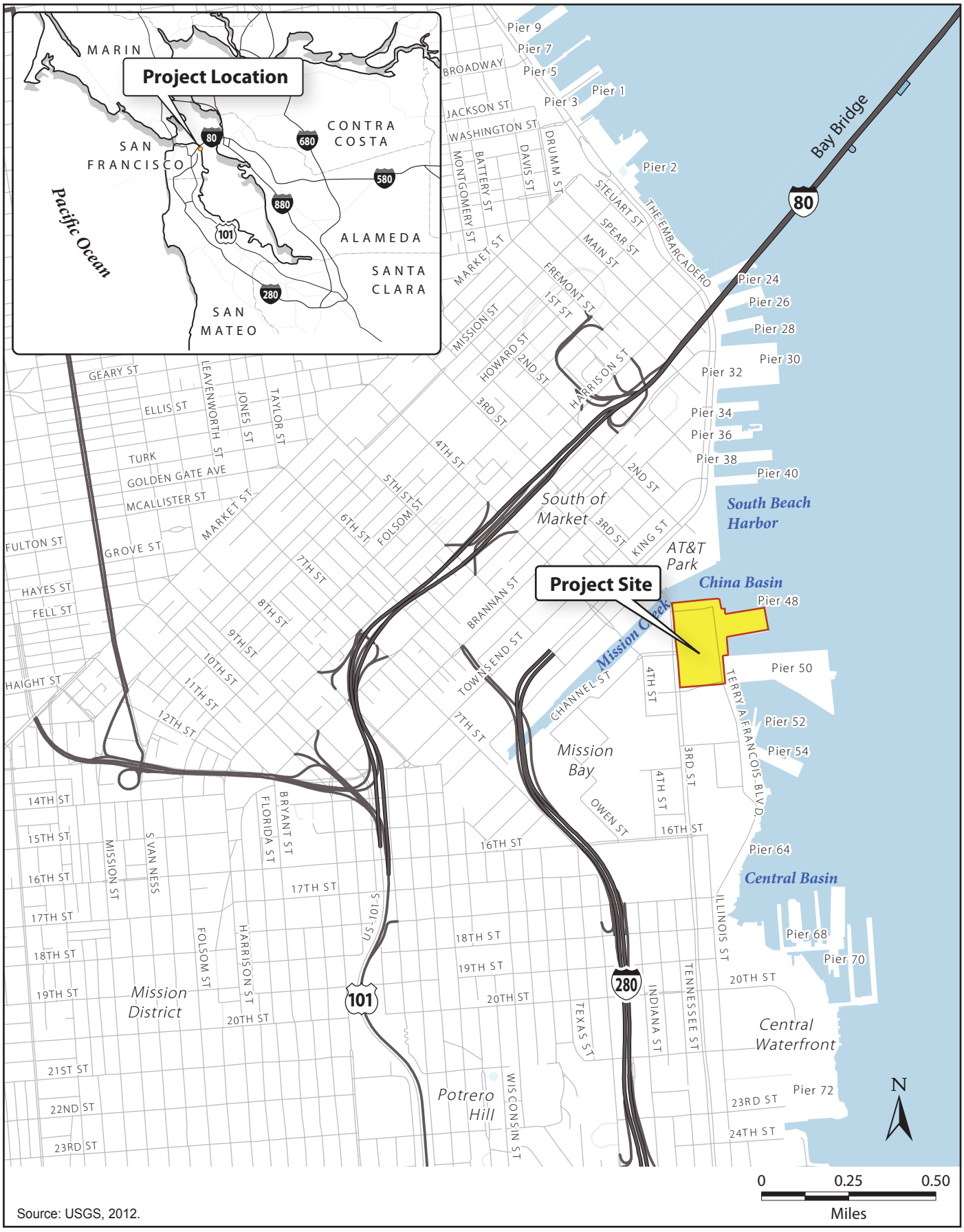
C. PROJECT SITE

The project site encompasses approximately 1.23 million square feet (sf) (approximately 28 acres) and, as noted above, includes several areas: Seawall Lot 337, Parcel P20, Pier 48 and the adjacent marginal wharf, China Basin Park, and Terry A. Francois Boulevard. Figure 2-1, on page 2-7, illustrates the location of the project site.

Seawall Lot 337 is a roughly rectangular parcel, bounded by Terry A. Francois Boulevard to the north, Terry A. Francois Boulevard and Piers 48 and 50 to the east, Parcel P20 and Mission Rock Street to the south, and Third Street to the west. Pier 48 is bounded by the Bay to the north, east, and south and Terry A. Francois Boulevard to the west. China Basin Park is bounded by China Basin to the north, the Bay to the east, Terry A. Francois Boulevard to the south, and Third Street to the west. Figure 2-2, on page 2-8, depicts the existing land uses at the project site.

As noted above, the project site encompasses Assessor's Block 8719/Lot 002, Block 8719/Lot 006, and Block 9900/Lot 048. China Basin Park is the only existing open space on the project site. Most of the project site is paved, with Seawall Lot 337 and portions of Parcel P20 used mainly as a surface parking lot and the Pier 48 structure used for indoor parking and storage and warehouse uses. Seawall Lot 337 and Pier 48 are also used for special events, such as festivals and performances, which are held up to 50 days per year, with a total of approximately 200,000 to 250,000 guests annually.

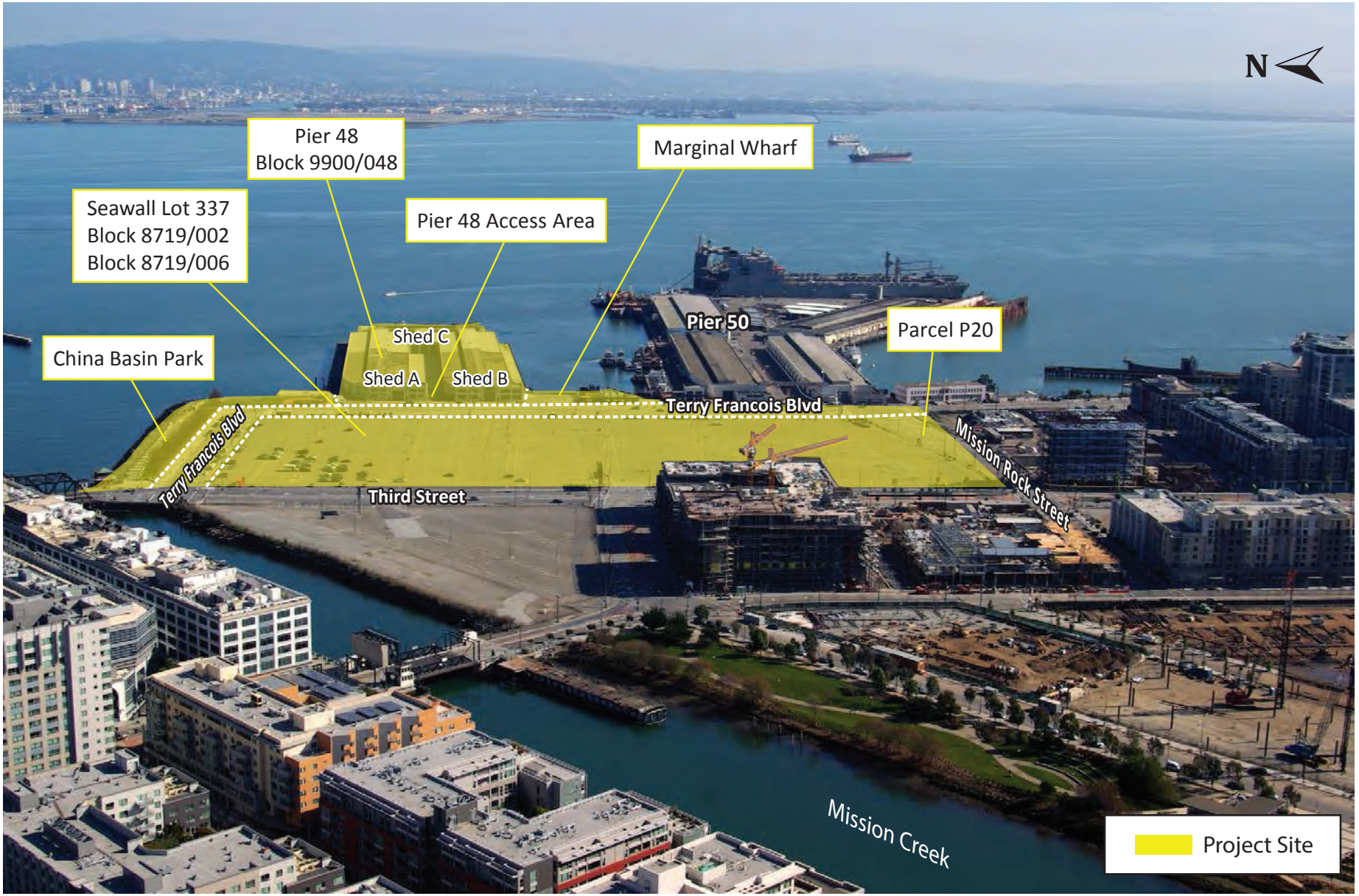
Existing onsite vegetation includes weeds and small shrubs along the perimeter of Seawall Lot 337 and grass and 26 trees in China Basin Park. The project site is generally flat and at an elevation of approximately 10.3 feet NAVD88, which is approximately 4.7 feet above mean high tide. Each area of the project site, including Seawall Lot 337, Parcel P20, Pier 48, the marginal wharf, China Basin Park, and existing streets and access areas, is described in detail below.



Graphics ... 00336.13 (3-21-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 2-1
Project Site Location



Source: Seawall Lot 337 Associates, LLC, 2014.

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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 2-2
Existing Land Uses

Table 2-1, below, presents a breakdown of the existing areas within the project site.

TABLE 2-1. EXISTING PROJECT SITE COMPONENTS

	Approximate Square Feet	Approximate Acres
Seawall Lot 337	618,600	14.2
Parcel P20	14,000	0.3
Pier 48	261,000	6.0
Sheds A, B, and C	*181,200*	*4.1*
Valley	*33,800*	*0.8*
Aprons	*46,000*	*1.1*
China Basin Park	95,800	2.2
Existing Streets and Access Areas	236,200	5.4
Terry A. Francois Boulevard	*153,400*	*3.5*
Pier 48 Access Area	*61,000*	*1.4*
Marginal Wharf between Piers 48 and 50	*21,800*	*0.5*
Total	***1,225,600***	***28.1***

Source: Seawall Lot 337 Associates, LLC, 2016

SEAWALL LOT 337

Seawall Lot 337 is an approximately 14.2-acre site that is currently occupied by a paved surface parking lot (Lot A) and pop-up retail. The Port leases this area to China Basin Ballpark Company, LLC. Mission Rock Street, which previously ran in a northeast-southwest direction along the southern boundary of the project site was realigned in 2014, pursuant to the Mission Bay Redevelopment Plan, to run in an east–west direction.

Lot A includes approximately 2,170 parking spaces for vehicles and 16 striped bus parking spaces on the eastern side of Lot A, along Terry A. Francois Boulevard, with those parking spaces used primarily for events at AT&T Park.[6] In addition, Seawall Lot 337 currently includes a temporary installation called The Yard at Mission Rock. The Yard, which is open from February through November from 7:00 a.m. to 10:00 p.m., is made out of 16 recycled shipping containers. It hosts food vendors, public gatherings, and programming opportunities for the community. Except for two small, portable pay-station kiosks and a billboard, Seawall Lot 337 does not contain any permanent structures; it functions as a surface parking lot and an area for pop-up retail and recreation.

[6] On game days when demand exceeds the 16 available bus parking spaces, another 16 buses can be parked along the east-west segment of Terry A. Francois Boulevard north of Seawall Lot 337. This segment is closed during games.

Seawall Lot 337 is located on former China Basin tidelands. A State lease to a railway company in the early 1900s required the railway to construct a seawall, reclaim tidelands, and construct a rail freight yard to serve the waterfront. Seawall Lot 337 was filled by 1906. Prior uses include railroad track and support structures for rail-related activities, parking, shipping, and truck maintenance. H&H Shipping Service Company, Inc., occupied a portion of Seawall Lot 337 from 1950 to 1996.

Temporary structures are erected periodically throughout the year to accommodate event uses. The existing surface lot provides parking for patrons of AT&T Park and parking for approximately 500 daytime commuters (primarily those working in nearby commercial buildings). In addition, the lot has provided space for special events, such as Cirque du Soleil circus performances and Cavalia equestrian shows, and associated parking.

Seawall Lot 337 is in a Mission Bay Open Space (MB-OS) Use District and the Mission Rock Height and Bulk District.[7,8] It is also public trust land and covered by special State legislation (Senate Bill [SB] 815, as amended by Assembly Bill (AB) 2797) that allows the Port to lease Seawall Lot 337 for nontrust uses under specified circumstances.[9]

Six acres on the eastern edge of Seawall Lot 337 are designated for port priority use in the San Francisco Bay Area Seaport Plan (Seaport Plan), which was developed jointly by the Bay Conservation and Development Commission (BCDC) and the Metropolitan Transportation Commission (MTC). Under the Seaport Plan, port priority use areas are reserved for port-related and other uses that will not interfere with port-related development, and marine terminals within port priority use areas are reserved for cargo-handling operations. As of January 1, 2017, AB 2797 removed the port priority use designation from Pier 48, the wharf between Pier 48 and Pier 50, and the portions of Seawall Lot 337 previously designated for port priority use.

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7 Seawall Lot 337 was rezoned to the Mission Bay Open Space Use District in 1991 as part of an earlier Mission Bay Redevelopment Plan that the Board of Supervisors later rescinded without rescinding the rezoning of Seawall Lot 337. With the exception of Parcel P20, the current Mission Bay Redevelopment Plan, adopted in 1998, does not include the project site.

8 As discussed in more detail below, Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative, which was approved by San Francisco voters on November 3, 2015, amended the height and bulk restrictions for the project site by establishing the Mission Rock Height and Bulk District (Planning Code Section 291).

9 Public trust lands are held on behalf of the people of the State for purposes of commerce, navigation, and fisheries. In addition, the Burton Act (stats. 1967, ch. 1333), under which the State of California transferred San Francisco Harbor to the City and its port, imposes statutory trust obligations on the Port. SB 815, approved in 2007, and amended by AB 2797 (stats. 2016, ch. 529) in 2016, authorizes the California State Lands Commission to lift public trust use restrictions from designated Port seawall lots, including Seawall Lot 337, for leases with terms of up to 75 years, or until December 31, 2105, upon making certain findings, as specified in SB 815.

PARCEL P20

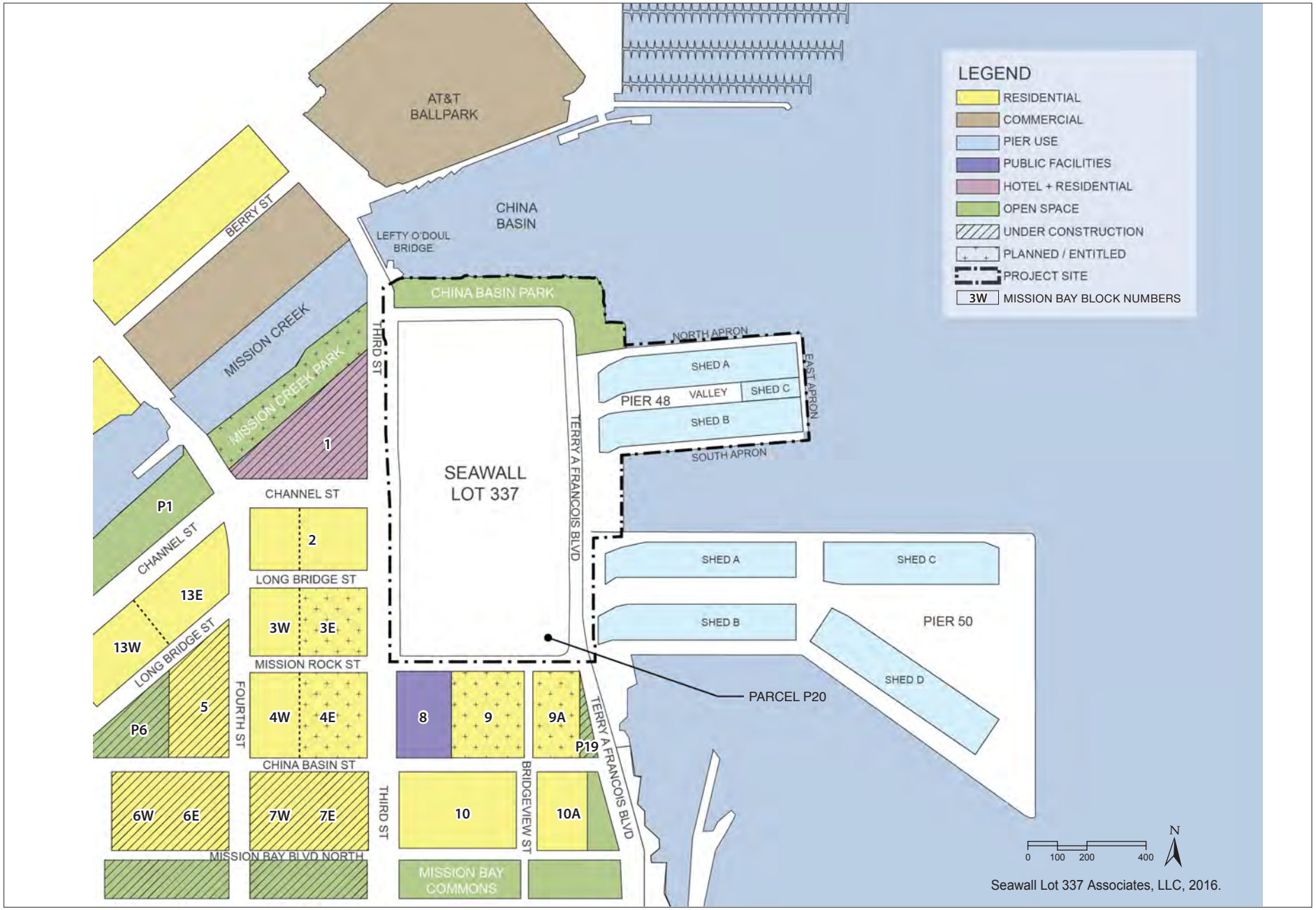
The project site includes a 0.3-acre (14,000 sf), approximately 20-foot-wide, strip of land adjacent to the south side of Seawall Lot 337, along the north side of Mission Rock Street. This area, shown in Figure 2-2 (page 2-8) and referred to as Parcel P20, is within the Mission Bay South Redevelopment Plan area. Parcel P20 is within the MB-OS Use District and the Mission Rock Height and Bulk District. Under the Mission Bay South Redevelopment Plan, the intended use of this parcel was to act as a thin landscape buffer between residential uses to be built on the south side of Mission Rock Street and industrial uses at Seawall Lot 337. No such buffer has been or will be necessary because, since that time, Seawall Lot 337 and Parcel P20 have been used for parking and special-event uses, and they are now proposed for residential, commercial, and open space uses (as discussed in more detail below).

Parcel P20 is subject to the public trust but, unlike Seawall Lot 337, was not covered by SB 815.[10] The Port Commission approved the inclusion of Parcel P20 in the project site, subject to necessary approvals by the Board of Supervisors and the San Francisco Office of Community Investment and Infrastructure, or OCII (successor agency to the former San Francisco Redevelopment Agency), with respect to redevelopment plan and zoning changes and the State Lands Commission and the State Legislature with respect to its use for nontrust uses under SB 815 or similar successor legislation. AB 2797, authorizes OCII and the Board of Supervisors to amend the Mission Bay South Redevelopment Plan to remove Parcel P20 from the Mission Bay South Redevelopment Plan area and redefines the boundaries of Seawall Lot 337 to extend to edge of China Basin Park, as expanded, to the north and realigned Terry A. Francois Boulevard to the east and Mission Rock Street to the south.

PIER 48

Pier 48 is a pile-supported, approximately 261,000 sf (6.0-acre) facility (including the pier structure and aprons). The pier is approximately 369 feet wide (including the northern and southern aprons) and 610 and 640 feet long (including the eastern apron) along its north and south sides, respectively. About 181,200 gsf of Pier 48 consists of enclosed warehouse space that includes two one-story main sheds (Shed A and Shed B) that are connected by a one-story connector shed (Shed C) at the east end of the pier (as shown in Figure 2-3 on page 2-12).

[10] SB 815 suspends application of public trust use restrictions for certain seawall lots, including Seawall Lot 337. AB 2797 authorizes actions necessary to add portions of Parcel P20 to Seawall Lot 337.



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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 2-3
Project Site and Surrounding Land Uses

The structure was completed in 1929, with the connector shed (Shed C) built in 1938. Because of fire damage, Shed C was reconstructed by the Port in 2002. Pier 48 is the southernmost pier structure within the Port of San Francisco Embarcadero Historic District (Embarcadero Historic District), which is listed in the National Register of Historic Places (National Register). The Embarcadero Historic District encompasses an approximately 3-mile stretch of the city's northeastern waterfront, from Pier 45 in the north to Pier 48 in the south.[11] Pier 48, including the Pier 48 section of the seawall and bulkhead wharf, is identified as a contributory resource to The Embarcadero Historic District but is not individually listed as a historic resource (The Embarcadero Historic District is discussed below). The building façade is of Gothic style, similar to the frontages of other piers along The Embarcadero.

The three connected sheds on Pier 48 are all approximately 40 feet in height. Between Shed A and Shed B is an approximately 33,800 sf uncovered "valley," or open-to-sky space. Currently, Shed A and Shed C are used for parking for AT&T Park events and special events, such as Oktoberfest. When used for parking, Shed A and Shed C jointly accommodate approximately 700 vehicles. Shed B has been leased by the Department of Elections for storing voting machines.

The Pier 48 substructure includes the east apron. The northern and southern aprons are separate wooden structures and independent of the concrete Pier 48 substructure. In addition, a seismic retrofit was recently done to the Pier 48 structure. The eastern apron of Pier 48 is currently part of the premises the Port leases to Cross Link, Inc. (dba Westar Marine Services [Westar]), a barge, water taxi, and tug operator. The southern berth of Pier 48 is occupied by tugs and maintenance facilities for ferry boats. The northern apron is red-tagged,[12] vacant, and not actively used for any purpose. Public access has never been available to the northern (20,300 sf), southern (21,000 sf), or eastern (4,700 sf) aprons because these aprons are in varying states of disrepair or are encumbered by existing maritime industrial uses that are incompatible with unrestricted public access.

Pier 48 is located in a Heavy Industrial (M-2) Use District and the Mission Rock Height and Bulk District. The Seaport Plan designates Pier 48 as a port priority use area and as a future site for neo-bulk cargo shipping and break bulk cargo storage. Table 2-2, below, summarizes the existing square footage breakdown of Pier 48.

[11] The pier numbering convention used by the Port assigns odd numbers to facilities north of the Ferry Building and even numbers to facilities south of the Ferry Building.

[12] Structures that have been red-tagged are severely damaged to the degree that the structure is too dangerous to occupy.

TABLE 2-2. PIER 48 COMPONENTS

	Square Footage (sf)[a]
Shed A	84,600
Shed B	87,000
Shed C	9,600
Total Structures	***181,200***
Valley	33,800
Aprons	46,000
Total Pier 48	***261,000***

Source: Seawall Lot 337 Associates, LLC, 2015

Note:

[a.] Square footages are rounded to the nearest one hundred.

CHINA BASIN PARK

Approximately 2.2 acres of the northern portion of the project site are improved as China Basin Park and perimeter walkways. China Basin Park was constructed following the opening of AT&T Park and was opened to the public in 2001. The park includes a lawn lined with a single row of 26 trees and a paved bicycle/pedestrian pathway. The park features views of the Bay and its surroundings. It contains viewing areas, benches, picnic areas, lighting, a small baseball diamond, a statue of former Giants player Willie McCovey, and historic markers representing the Giants teams from 1958 through 1999. China Basin Park is designated as an Other Public Access and Open Space area in the Port's WLUP and is within an MB-OS Use District and the Mission Rock Height and Bulk District.

EXISTING STREETS AND ACCESS AREAS

The project site includes approximately 3.5 acres of Terry A. Francois Boulevard. This street curves around Seawall Lot 337 from Third Street to the northwest to Mission Rock Street to the southeast. The 1.4-acre Pier 48 and Pier 50 access areas are located directly to the west and south of Pier 48 (see Figure 2-2 on page 2-8). To the south, between Pier 48 and Pier 50 and east of Terry A. Francois Boulevard, is the 0.50-acre marginal wharf (see Figure 2-2). A portion of the marginal wharf is leased on a month-to-month basis to the One Big Man Truck moving company and Westar for parking, truck access, and truck turnaround in the interim period until the proposed project is developed. A portion of the southern end of the marginal wharf is leased by a restaurant, with the rest of the marginal wharf vacant.

Access to the project site is currently provided by Third Street, Mission Rock Street, and Terry A. Francois Boulevard. Bridges located at the Third Street and Fourth Street crossings over Mission Creek provide pedestrian, bicycle, San Francisco Municipal Railway (Muni), and vehicle access from the South of Market area (SOMA) and the Fourth and King Streets Caltrain station to the project site.

D. PROJECT SETTING

The project site is adjacent to the Mission Bay South Redevelopment Plan area, which is characterized by large parcels of land and streets that generally follow a grid pattern. Third Street is the primary arterial street in Mission Bay South, traveling in a north-south direction. The majority of the streets in the Mission Bay area are two-way. Topographic features in the proposed project vicinity are minimal, and grading is generally flat.

Mission Bay is largely built out with medium-density, mixed-use blocks. However, several blocks in the area are currently under development, with the parcels adjacent to the project site in various stages of completion. These adjacent parcels are vacant, serving temporarily as surface parking lots, under construction, or used for construction staging. Figure 2-3, on page 2-12, illustrates the land uses and development status for parcels adjacent to the project site. In addition, several nearby parcels contain newly constructed buildings (completed from the late 1990s to the present) in contemporary architectural styles. Structures that were built during the period when the area was an active rail yard and dominated by port uses (1870s to 1990s) were previously demolished.

Historical structures in the immediate vicinity of the project site are limited to the Pier 50 Office Building, Lefty O'Doul Bridge on Third Street, the former ATSF Car Ferry Slip southeast of the Bay View Boat Club between Piers 52 and 54, Fourth Street/Peter Maloney Bridge, and the former San Francisco Fire Department fire station at the northeast corner of Third Street and China Basin Street, which is now part of the San Francisco Public Safety Building.

China Basin borders the site to the north and San Francisco Bay to the east. AT&T Park is located across China Basin, north of China Basin Park.

TRANSIT

The project site is within the vicinity of numerous public transit routes. The Muni T-Third light rail line operates in the median of Third Street directly adjacent to the project site and connects downtown with the southeastern portion of the city. The nearest T-Third light rail stop is on Third Street at Mission Rock Street, adjacent to the project site. There are also stops between Third Street, Second Street, and King Street. The N-Judah light rail line operates on

The Embarcadero between downtown and the Caltrain station at King and Fourth Streets, with a stop at the ballpark at King between Third and Second Streets. Both the T-Third and the N-Judah Muni lines provide connections to regional transit providers that serve the North Bay, the Peninsula and San Francisco International Airport (SFO), and the East Bay. These regional transit providers include Caltrain (Peninsula and South Bay), Golden Gate Transit (North Bay) and AC Transit (East Bay) buses, Golden Gate Transit (North Bay), the Blue & Gold Fleet (North Bay), the Water Emergency Transportation Authority (WETA) (East Bay and Peninsula) ferries, and Bay Area Rapid Transit (BART). Additional local transit connections in the project site vicinity are provided by Muni coach routes 10-Townsend (to Pacific Heights via downtown), 30-Stockton and 45-Union/Stockton (to the Marina via downtown), and 47-Van Ness (to Fisherman's Wharf via the Civic Center), with express service from the Caltrain station to downtown provided by Muni's 80X, 81X, and 82X motor coach lines.

Direct regional transit access to and from the Peninsula and South Bay is provided by Caltrain, with its terminal station located at King and Fourth Streets, less than half a mile from the project site. In addition, ferries from the city of Larkspur in Marin County transport attendees of AT&T Park ballgames and other special events to and from the ballpark.

A ferry dock is located at the China Basin Ferry Terminal, north of the project site and across China Basin, along the eastern edge of AT&T Park. The main ferry terminal along The Embarcadero (at the Ferry Building, across from the base of Market Street) is located about 13 blocks northeast of the project site.

ADJACENT USES

The project site is surrounded by China Basin and AT&T Park to the north, the Bay to the east, Pier 50 to the south and east, and Mission Bay to the south and west. These areas are described in more detail below.

CHINA BASIN AND MISSION CREEK

China Basin is directly north of China Basin Park where the mouth of Mission Creek meets the Bay. Mission Creek was once a waterway that extended from the Mission neighborhood to the Bay but is now channelized going west from China Basin to approximately Interstate 280 (I-280) and undergrounded west of I-280. Mission Creek Park (being developed as part of the Mission Bay Redevelopment Plan) lines the creek on the north and south and includes open grassy areas, pathways, a small amphitheater, overlook areas, a nonmotorized boat launch, sports courts, and a dog play area.

AT&T PARK

North of the project site, across China Basin, is AT&T Park, home of the San Francisco Giants major league baseball team. Located at 24 Willie Mays Plaza, the ballpark opened in April 2000 and has a seating capacity of 41,503. The regular major league baseball season runs from early April to late September, followed by the postseason in October and early November.

AT&T Park attracts an average of 3.5 million visitors to the neighborhood annually. Visitors attend baseball games or other events and patronize the local restaurants, retail stores, and bars. In addition to two to five preseason games and up to 12 postseason games, there are approximately 81 regular-season home games per year, of which approximately 27 are held during the day (a maximum of 13 mid-week day games) and approximately 54 are held in the evening. AT&T Park hosts approximately 145 nonbaseball-related special events per year, including a limited number of concerts, charity and private events, and other sporting events attended by a total of approximately 170,000 visitors annually. The ballpark, which contains a variety of retail and restaurant uses, is located in an M-2 Use District[13] and a 150-X Height and Bulk District.[14]

PIER 50

Pier 50 is located to the east and south of Seawall Lot 337 and to the south of Pier 48. Mission Rock, originally a rocky island outcropping directly outside the mouth of Mission Bay, was used for a long period as an off-shore grain terminal until the mid-twentieth century when it was destroyed by fire. The current Pier 50 facility was expanded in the 1950s to encompass the actual Mission Rock outcropping. This expansion more than doubled the pier's size, which now exceeds 14 acres and contains four warehouse sheds, Sheds A, B, C, and D (see Figure 2-3 on page 2-12).

Pier 50 is currently an active maritime industrial pier. Ship repair, a past use at Pier 50, has not been performed at the pier since the 1990s. Pier 50 houses the Port's primary maintenance facility (in Shed D), which supports Port maintenance activities along the waterfront. Pier 50's three other warehouse sheds (Sheds A, B, and C) accommodate industrial maritime support, harbor service operations, and parking uses. Pier 50 provides a ready-reserve berthing facility for the U.S. Department of Transportation Marine Administration (MARAD), which provides transport for military troop deployments and national emergencies as part of the National Defense Reserve Fleet. Two MARAD transport ships are currently berthed at the east face of Pier 50. In addition, towing and tug boat services, operated by Westar, are located in Shed C.

[13] Under Proposition B, passed in March 1996, the M-2 zoning designation applies to the ballpark uses but with provisions of Planning Code Section 249.18 incorporated under a conditional use authorization.

[14] A 150-X Height and Bulk District allows height exceptions above the 150-foot base to be approved in accordance with the conditional use procedures.

Westar operations are based out of Pier 50, with storage areas for equipment and vessels at the south apron of Pier 48, as discussed above. There are numerous other smaller interim tenants at Pier 50, which typically use the pier for storage and parking uses. A restaurant is located in an approximately 3,400 gsf building at Pier 50.

MISSION BAY

Mission Bay, which covers approximately 303 acres[15] of land between the Bay and I-280, is a mixed-use, transit-oriented area. This neighborhood is roughly bounded by Townsend Street to the north, Third Street (adjacent to the project site) and Terry A. Francois Boulevard to the east (south of the project site), Mariposa Street to the south, and Seventh Street to the west. Development in this area is controlled through redevelopment plans, design for development documents, and owner participation agreements.[16] Although redevelopment agencies in the state were dissolved by 2011 legislation, under the terms of the dissolution legislation, these land use controls and agreements remain in effect. The Mission Bay North Redevelopment Plan area (Mission Bay North), which extends north to Townsend Street, is separated from the Mission Bay South Redevelopment Plan area (Mission Bay South) by Mission Creek. Mission Bay North is almost fully developed. Mission Bay South, which has several undeveloped blocks, extends from Mission Creek to the north to the Bay to the east and Mariposa Park Street to the south.

The fully entitled, and under construction, development program includes approximately 6,400 housing units, 3.4 million gsf of office/life science/biotechnology space; a University of California San Francisco (UCSF) research campus, containing 3.15 million gsf of building space; a 550-bed UCSF Medical Center (not included in the UCSF research campus); 285,000 gsf of retail space; a 250-room hotel with 350 housing units; 49 acres of public open space; and new public facilities, including a 280,000 gsf public safety building, a 7,500 gsf public library, and a 500-student public school. Upon full implementation of the Mission Bay North and South Redevelopment Plans, more than 11,000 residents and 30,000 permanent jobs will have been added to the Mission Bay area, with full development contemplated within the next 10 years, depending on market conditions.[17]

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[15] The 0.3-acre Parcel P20 strip of land that is part of the proposed project site and within the Mission Bay South Redevelopment Plan area is included within these 303 acres.

[16] The Board of Supervisors established the Mission Bay North Redevelopment Plan area and South Redevelopment Plan area. Each redevelopment area has redevelopment plans, design for development documents, and owner participation agreements between the redevelopment agency and the original master developer. Related interagency cooperation agreements provide for coordination between City departments and the redevelopment agency in their review of infrastructure development.

[17] Mission Bay Development Group. n.d. *Mission Bay*. Available: http://www.mbaydevelopment.com/#!mission-bay-new/cba2. Accessed: March 24, 2015.

The largest development by a single property owner at Mission Bay is the UCSF research campus and hospital complex. As of February 2015, UCSF had built approximately 398,000 gsf of labs/education space, 407,000 gsf of lab/research space, 155,000 gsf of educational/social/recreational space, 385,000 gsf of research/education space, 763,000 gsf of faculty office/support space, 290 hospital beds, and 430 housing units.[18] In addition, the UCSF campus is anticipated to include a full-size sports field, a permanent child care facility, and neighborhood-serving retail space. Mission Bay is in a Mission Bay Redevelopment Area (MB-RA) Use District and in a MB-RA Height and Bulk District.[19]

E. PROJECT CHARACTERISTICS

The proposed project includes the construction of approximately 2.7 to 2.8 million gsf of mixed-use, multi-phased development on the proposed 11 development blocks (Blocks A through K). As shown in Table 2-4 (page 2-23), the buildings proposed on Seawall Lot 337 could range in height from 90 to 240 feet, depending on the land use. In general, buildings with primarily commercial uses would range in height from 90 feet (7 stories) to 190 feet (13 stories), while buildings with mainly residential uses would range in height from 120 feet (11 stories) to 240 feet (23 stories). The tops of upper buildings (towers) may extend up to 20 feet (40 feet on Block F) vertically above the maximum designated building height. In addition, the project site would include structured above-ground and below-grade parking (totaling approximately 1.1 million gsf) and pedestrian and vehicular streets on Seawall Lot 337. The proposed project also includes the rehabilitation and reuse of the existing Pier 48 structure. In addition, the proposed project would include doubling the size of the existing China Basin Park from 2.2 acres to 4.4 acres, establishing two new parks (Mission Rock Square and Channel Wharf) and open space areas, and providing a promenade along the waterfront, including the new 0.5-acre Channel Wharf area between Piers 48 and 50.

The proposed project would result in a total of approximately 8.0 acres of new and expanded parks, open space areas, and shoreline access areas. The new or expanded areas would include China Basin Park and a waterfront promenade, Mission Rock Square, Channel Lane, and Channel Wharf (see Figure 2-4 on page 2-21). These areas would be connected by a network of pedestrian-oriented public streets. In addition, the new or expanded open spaces onsite would be linked to the Blue Greenway, a City and County of San Francisco (City) project to improve San Francisco's southerly portion of the 500-mile, nine-county, region-wide Bay Trail. The Blue Greenway system will be developed by the City, separate from the proposed project. The

[18] Mission Bay Development Group. n.d. *Current Development Map*. Available: http://www.mbaydevelopment.com/#!mission-bay-new/cba2. Accessed: March 24, 2015.

[19] A MB-RA Height and Bulk District is governed by the Mission Bay North and Mission Bay South Redevelopment Plans, which include a range of heights by block.

proposed project would complete the portions of the Blue Greenway within the boundaries of the project site. It is discussed in more detail below, along with open spaces and parks proposed by the project.

Pier 48, including the Pier 48 section of the seawall and bulkhead wharf, would be rehabilitated consistent with the SOI Rehabilitation Standards and the SOI Guidelines,[20] as discussed in more detail below, and the Port of San Francisco Historic Preservation Review Guidelines for Pier and Bulkhead Wharf Substructures (Port Historic Guidelines).[21] The project sponsor proposes to repurpose the existing pier sheds and valley to accommodate a range of uses, including industrial/production, associated general office and storage, active/retail, restaurant, tour and exhibition space, and event-related uses, and public access with the potential for expanded maritime uses on the aprons and along Channel Wharf.

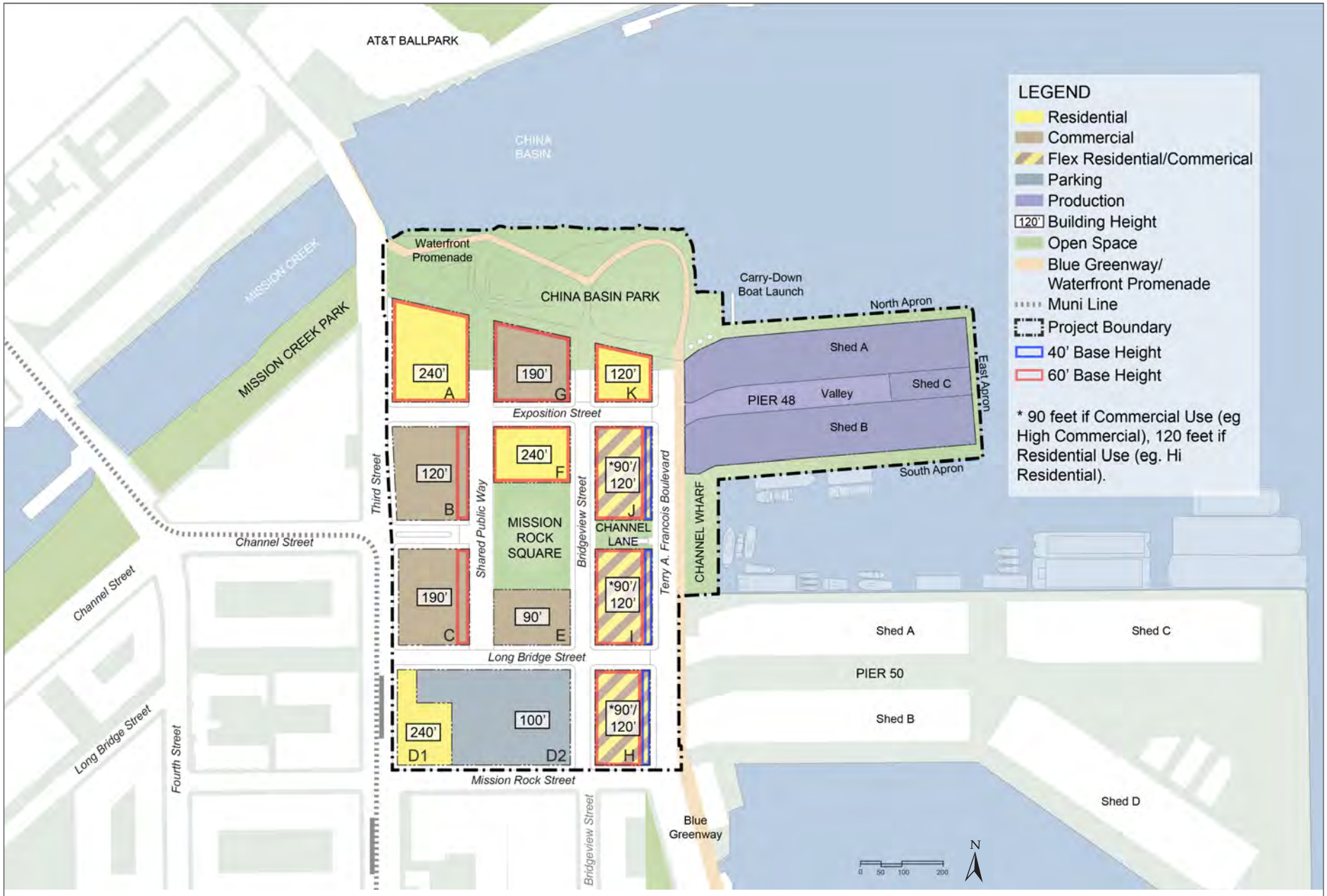
The industrial use tenant would occupy all usable interior shed space and the currently open-to-sky valley space of Pier 48 under a 30-year lease. At proposed project completion, the Pier 48 sheds would include approximately 209,000 gsf of useable space, consisting of the 182,000 gsf industrial use, specifically analyzed as a proposed brewery use; 12,000 gsf restaurant; 1,400 gsf active/retail area; and 14,000 gsf exhibition space/museum. The tenant would also use the Pier 48 valley for loading and storage, and the existing aprons would be repaired as part of the proposed project, for a total of 288,500 gsf[22] at Pier 48.

The following proposed project components are discussed in detail below: Seawall Lot 337 and the proposed flexible development program, open spaces and parks, and Pier 48. The potential range of development for each of these land use components is summarized in Table 2-3 on page 2-22.

[20] The SOI Rehabilitation Standards provide a useful analytical tool for understanding and describing the potential impacts of changes to historic resources, including new construction inside or adjoining historic districts.

[21] Port of San Francisco. Historic Preservation Review Guidelines for Pier and Bulkhead Wharf Substructures. Approved: October 26, 2004.

[22] The increase in square footage compared to existing conditions (261,000 gsf) is due to the construction of a mezzanine in Shed A.



Source: Seawall Lot 337 Associates, LLC, 2016

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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 2-4
Proposed Site Plan and Height Ranges

TABLE 2-3. DEVELOPMENT POTENTIAL

	Range of Development[a]
Seawall Lot 337	
Residential[b]	1.1–1.6 million gsf (1,000–1,600 units)
Commercial/Office	972,200–1.4 million gsf
Active/Retail	241,000–244,800 gsf
Total Development	2.7–2.8 million gsf
Parking Garages[c]	
Parking Structure (Block D2)	837,200 gsf
Parking, Below-Grade Garage (Mission Rock Square)	227,200 gsf
Total Maximum Development at Seawall Lot 337	***3.8–3.9 million gsf[d]***
Open Space/Public Plazas	8.0 acres
Rehabilitation of Pier 48	242,500 gsf

Source: Seawall Lot 337 Associates, LLC, 2015

Notes:

a. Square footages are rounded to the nearest one hundred, with the exception of square footages greater than 1 million, which are rounded to the nearest one hundred thousand.

b. The exact number of dwelling units to be provided by the proposed project has not been established at this time.

c. In addition to the 2,300 spaces in the parking garage on Block D2 and the 700 spaces in the Mission Rock Square below-grade garage, Seawall Lot 337 would include up to 100 spaces located below grade, at grade, or above grade within the proposed buildings (no more than 10 spaces per building). In total, the project sponsor would provide a maximum of 3,100 parking spaces.

d. Regardless of the mix of residential, commercial, and retail space selected, total maximum development would not exceed 3.9 million gsf. See Table 2-5 (page 2-32) for the detailed tabulation of the total.

SEAWALL LOT 337

SITE DESIGN AND LAYOUT

Seawall Lot 337 would be divided into 11 blocks that would be configured in a grid pattern, separated by a system of internal streets. As detailed in Table 2-4 on the following page, and shown in Figure 2-5 (page 2-24), block sizes would vary in size, with Block D as the largest and Block K as the smallest. The block dimensions would align the proposed streets with existing neighboring streets in the adjacent Mission Bay neighborhood. However, the dimensions of blocks would, on average, be approximately one-third to one-half the size of the typical Mission Bay block. The development of blocks is intended to maintain flexibility for many uses (as discussed below), with varying widths to accommodate market needs.

TABLE 2-4. DEVELOPMENT POTENTIAL—BLOCK SUMMARY

	Use[a]	Heights (ft)[b]	Parking (spaces)[c]
Block A	Residential	240	< 10
Block B	Commercial	120	< 10
Block C	Commercial	190	< 10
Block D	Parking/Residential[d]	240	2,300
Block E	Commercial	90	< 10
Block F	Residential	240	<10
Block G	Commercial	190	< 10
Block H	Flexible	90 (commercial)/120 (residential)	< 10
Block I	Flexible	90 (commercial)/120 (residential)	< 10
Block J	Flexible	90 (commercial)/120 (residential)	< 10
Block K	Residential	120	< 10

Source: Seawall Lot 337 Associates, LLC., 2015

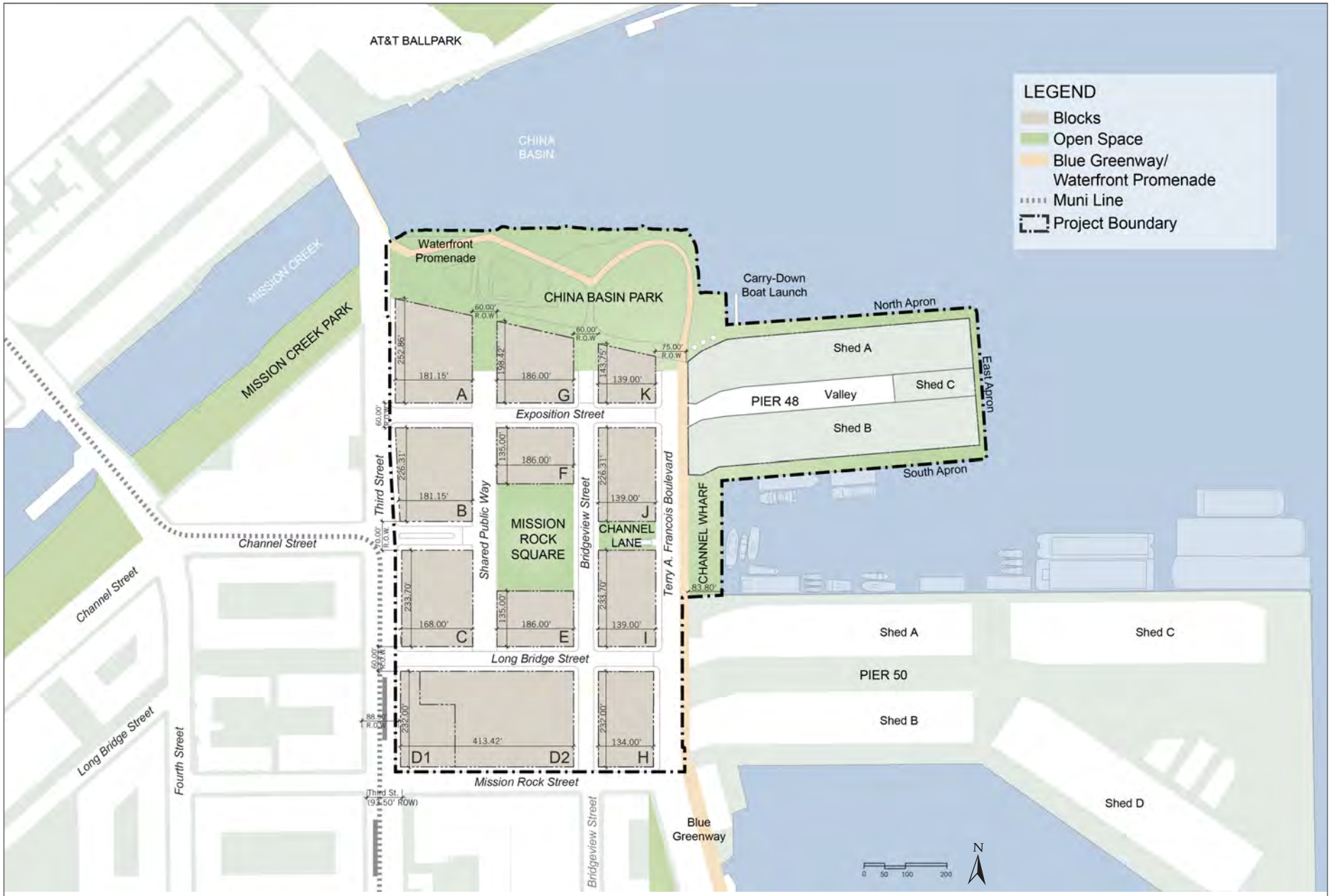
Notes:

a. All blocks would be divided into "zones" that would define permitted uses on the lower floors as active/retail, production, commercial, or residential.

b. The number of stories for each building can be estimated using the assumption that residential buildings average 10 feet per story and commercial buildings average 14 feet per story; and ground-floor heights of about 18 feet. Measurement does not include the nonhabitable area elements of the buildings or wall extensions that would screen rooftop mechanical systems.

c. In addition to the parking structure on Block D2, most other buildings could include small amounts of onsite parking (less than approximately 10 spaces per building). Further, up to 700 additional parking spaces would be included in an below-grade parking garage beneath Mission Rock Square. With these 700 spaces, the parking structure (2,300 spaces), and parking within the proposed buildings (up to 100 spaces), the proposed project would have a maximum of 3,100 parking spaces.

d. Block D would include two separate, but attached, buildings, totaling approximately 1.1 million gsf. A building along Third Street would include approximately 250,000 gsf of residential. The parking structure building on the remainder of Block D, adjacent to Bridgeview Street, would be approximately 837,200 gsf, plus approximately 14,000 gsf of active/retail on the lower floors.



Source: Seawall Lot 337 Associates, LLC, 2016.

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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 2-5
Proposed Block Dimensions

The 0.3-acre Mission Bay Redevelopment Plan Parcel P20 would be incorporated into Seawall Lot 337 to allow the proposed new parking structure on Block D and future development on Block H to front directly onto Mission Rock Street.[23] Additionally, incorporating Parcel P20 would allow Bridgeview Street, a proposed interior neighborhood street and bicycle connection, to directly connect with Mission Rock Street. This would increase physical and visual access to the project site from adjacent areas to the south and southwest and would also assist with the dispersal of vehicles from the proposed parking structure on Block D. In addition, the incorporation of Parcel P20 would allow for a bicycle connection through the project site from the Blue Greenway.

Bulk and massing of the proposed buildings would vary by block, land use, and height. Buildings along Third Street would continue the Third Street streetwall, with 65- to 90-foot-high podiums, and buildings along Terry A. Francois Boulevard would step down to 40-foot maximum heights to reduce the height near the water's edge. As shown in Table 2-4 (page 2-23), the buildings proposed on Seawall Lot 337 could range in height from 90 to 240 feet, depending on the land use. In general, buildings with primarily commercial uses would range in height from 90 feet (7 stories) to 190 feet (13 stories), while buildings with mainly residential uses would range in height from 120 feet (11 stories) to 240 feet (23 stories). The tops of upper buildings (towers) may extend up to 20 feet (40 feet on Block F) vertically above the maximum designated building height. These nonhabitable area elements, or wall extensions, would screen rooftop mechanical systems and allow for greater building differentiation and architectural expression.

DESIGN CONTROLS

Design Controls[24] would guide the physical development on the project site. The Draft Design Controls are included as Appendix 2 of this document. The Design Controls (to be approved with the project entitlements) explain the controls and describe to developers, designers, and permitting agencies how the comprehensive design of the project site comes together to achieve the goals of the overall proposed project, expressed in the Vision and Design Intent document. The Design Controls would serve as a guide to the proposed development with respect to bulk, massing, setbacks, and other physical design and use aspects of the proposed project.

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[23] Because of the realignment of Mission Rock Street, parts of Parcel P20 would remain outside of the project site.

[24] The proposed Mission Rock Design Controls are expected to be made up of two levels of regulation: Standards and Guidelines. Standards are quantifiable, and any deviation from them would require discretionary approval from the appropriate public agency. Guidelines are more qualitative or performance-based and are nonquantifiable.

PROPOSED DEVELOPMENT

As summarized in Table 2-3 (page 2-22), development of the proposed 11 blocks (A through K) on Seawall Lot 337 could total 2.7 to 2.8 million gsf. Total development on Seawall Lot 337, depending on market conditions, would include a mix of approximately 1.1 to 1.6 million gsf of market-rate and affordable residential uses, approximately 972,000 to 1.4 million gsf of commercial uses, and approximately 241,000 to 244,800 gsf of active/retail/production uses. In addition, the project site would include approximately 1.06 million gsf of parking within below-grade and above-ground structured or enclosed parking garages, for a total development area of 3.8 to 3.9 million gsf.

Land uses on the three designated flexible blocks (Blocks H, I, and J) would be dependent on market conditions, as discussed below. Under no land use assumption studied in this Environmental Impact Report (EIR) would both the upper range of residential and the upper range of commercial land uses (1.6 million gsf and 1.4 million gsf, respectively) be developed on Seawall Lot 337. The ultimate development on the site would be within the ranges discussed above but, in total, would not exceed approximately 3.9 million gsf, including enclosed parking areas.

Block D would include an 837,200 gsf parking structure on Block D2 that would accommodate approximately 2,300 parking spaces and an additional 14,000 gsf of ground-floor active/retail. The block could also include 241,000 gsf of residential uses and ground-floor active/retail in a separate, but attached, building (Block D1). A 227,000 gsf parking garage under Mission Rock Square would provide an additional 700 parking spaces at the project site. This parking garage would extend approximately 33 feet below grade. Additional parking could be provided within the proposed buildings (approximately 10 spaces each), for a total of approximately 3,100 parking spaces at the project site.

SEAWALL LOT 337 FLEXIBLE DEVELOPMENT PROGRAM

The project sponsor proposes flexible zoning and land uses on three of the 11 proposed blocks in order to respond to future market demands. Specifically, Blocks H, I, and J on Seawall Lot 337 are proposed to be designated to allow either residential or commercial as the predominant use above the lower-floor active/retail uses. The project sponsor would determine the primary land uses of the three flexible zoning blocks above the lower floor (i.e., residential or commercial) at the time of filing for design approvals for block development proposals. These flexible blocks are analyzed in this document as ranges and land use assumptions (High Commercial or High Residential). Each block could be constructed by a different developer; however, the project would be required to adhere to the designated land use for each block and any governing land use regulations, including the Design Controls.

Three blocks (Blocks A, F, and K) would be designated as primarily residential above the lower-floor active/retail uses, and four blocks (Blocks B, C, E, and G) would be designated as primarily commercial above the lower-floor active/retail/production uses. One block (Block D) would include parking (D2), active/retail, and residential uses (D1), as described above. Active/retail uses would be permitted on the lower floors of any of the commercial, residential, parking, or flexible blocks. Table 2-4, on page 2-23, summarizes the flexible development program by block.

The land uses proposed on Seawall Lot 337 are described below.

RESIDENTIAL USES

The specific residential unit mix has not been determined but could consist roughly of the following: approximately 20 percent micro-units[25] and studios, approximately 40 percent 1-bedroom units, and approximately 40 percent 2-bedroom units.[26]

As discussed above, housing would be provided on Blocks A, D1, F, and K and potentially on flexibly zoned Blocks H, I, and J. The proposed project would include approximately 1,000 to 1,600 new housing units. Assuming a citywide average of 2.35 persons per household, approximately 2,350 to 3,760 residents could live at the project site. In addition, the onsite housing could provide employment opportunities for approximately 30 to 50 people, at the leasing and management offices.

New rental housing built for the proposed project would exceed inclusionary housing requirements set forth in Section 415 of the City's Planning Code. The project sponsor has agreed to restrict 40 percent of the onsite units to inclusionary affordable housing targets. Affordable housing would be provided in a balanced manner throughout the phasing of the proposed project.

COMMERCIAL USES

Commercial land uses include nonretail commercial work spaces such as office, R&D/biotech, lab, institutional, medical, and other similar nonretail uses. As discussed above, commercial uses would be provided on Blocks B, C, E, and G and potentially on the flexible Blocks H, I, and J above the active/retail/production uses on the lower floors. Commercial uses could provide jobs for approximately 3,520 to 5,070 employees.[27]

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[25] Micro-units are defined by the City of San Francisco as units with approximately 220 gsf of living space.

[26] However, for transportation analysis purposes, it was conservatively assumed that all units for both the High Commercial Assumption and High Residential Assumption would be 2-bedroom units.

[27] Adavant Consulting. 2015. *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand – Updated Project Definition*. Memorandum. June 30. (See Appendix 4-4 of this document.)

ACTIVE/RETAIL USES

The lower-floor areas of the proposed onsite development on Seawall Lot 337 would contain shops, restaurants, cafes, regional- and neighborhood-serving retail uses, community spaces, and production uses. The lower floors of residential and commercial buildings throughout Seawall Lot 337 and the first floor of the parking structure (Block D2) would, depending on which "zone" applies (see below), be permitted for active/retail, production, commercial, or residential uses, including a total of approximately 241,000 to 244,800 gsf of active/retail/production space. In addition, active/retail uses may be provided in potential rooftop lounges on Blocks A, G, and K and in a limited number of permanent retail kiosks and small stand-alone retail spaces in China Basin Park and Mission Rock Square. The exact locations of active/retail/production development onsite would be determined following approval of the proposed project and based on market conditions. The active/retail uses could provide jobs for approximately 740 to 750 employees.[28]

The ground floors on Seawall Lot 337 would serve pedestrians by providing a center of activity where the buildings meet the streets and open spaces. Figure 2-6, on page 2-29, illustrates the way in which the street frontage would be programmed. The following active/retail/production zones would be provided:

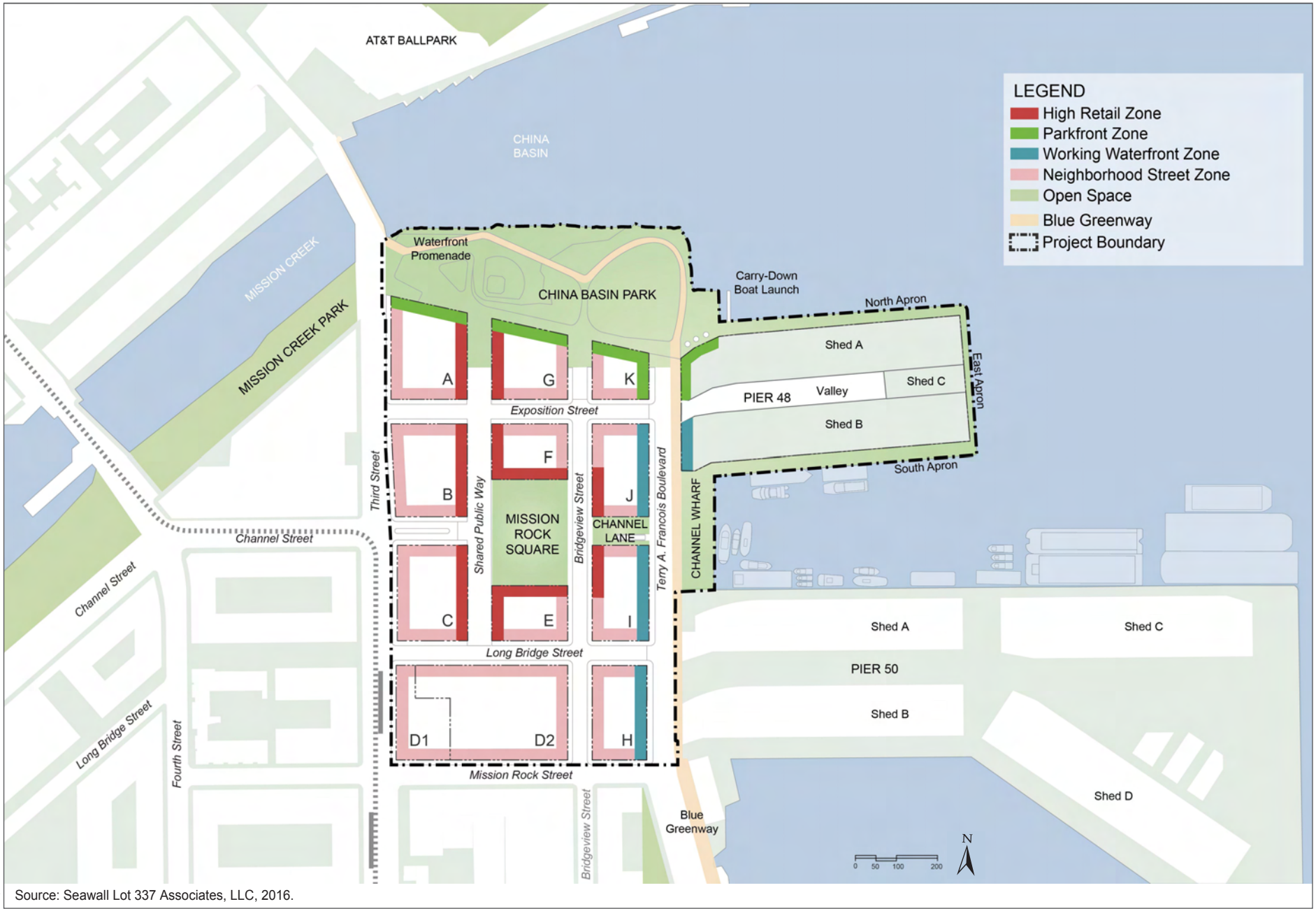
- *High Retail Zone.* The High Retail Zone represents the highest level of intensity for shops, cafes, and active/retail uses at Seawall Lot 337. This zone would be concentrated along the Shared Public Way[29] and Mission Rock Square (portions of Blocks A, B, C, E, F, G, I and J), creating the main focal point of active/retail activity on the project site and activating these public areas. This zone would be designed to accommodate many small shop-fronts, with a few larger stores and restaurants.

  Parkfront Zone. The Parkfront Zone represents a high level of activity and is designed for active/retail uses, cafes, restaurants, and entertainment uses that would front the promenade along the built edge of China Basin Park (portions of Blocks A, G, and K and Pier 48). Uses along this frontage would include locations for outdoor dining and events and provide a backdrop for activities at China Basin Park. These active/retail uses would be designed to anticipate larger crowds of pedestrians due to proximity to AT&T Park and China Basin Park.

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[28] Adavant Consulting. 2015. *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand – Updated Project Definition*. Memorandum. June 30. (See Appendix 4-4 of this document.)

[29] The Shared Public Way is a newly adopted street typology in San Francisco that gives priority to the pedestrian over the automobile with use of a single shared paved surface with no curbs or gutters. Automobiles access it from the adjoining streets at a curb cut, similar to a typical driveway. Once in the Shared Public Way, the driver, based on the use of street furniture and planting, is aware that the pedestrian has the right-of-way within this environment.



Source: Seawall Lot 337 Associates, LLC, 2016.

Graphics ... 00336.13 (3-21-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 2-6
Proposed Active, Retail, and Production Zones on the Project Site

- *Working Waterfront Zone.* The Working Waterfront Zone would support maritime and industrial uses, which would be located near other maritime uses along Terry A. Francois Boulevard, such as the Pier 52 boat launch and Bay View Boat Club. The location of the Working Waterfront Zone would serve to connect the development on Seawall Lot 337 with the production facility at Pier 48. The active/retail uses in this zone would include, but are not limited to, industrial, production, fabrication, manufacturing, and studios for craftspeople and artists. Examples of potential tenants could include craft jewelry makers, print shops, apparel makers, artisan food producers, commercial kitchens, furniture/prototyping manufacturers, urban wineries, and coffee roasters. The Working Waterfront Zone would be located within portions of Blocks H, I, and J and Pier 48.
- *Neighborhood Street Zone.* The Neighborhood Street Zone would include frontages with a lower intensity of adjacent active/retail space and would generally front onto the interior streets and along Third Street (portions of Blocks A through C and E through K and along all Block D frontages). Stoops and steps on residential and commercial buildings could create informal seating and gathering spaces. Uses in this zone would include residential, commercial, active/retail, and production uses.

OTHER LAND USES

In addition to the primary land uses described above, the Draft EIR considers other potential components of the proposed project as "variants." It is currently unknown if these components would ultimately be developed as part of the proposed project. The purpose of evaluating these components in the EIR is to allow for a greater variety of future uses as the project site is built out. The additional components that are evaluated in this document as "variants" include a hotel use, an entertainment venue, a district energy facility, and reconfigured parking. Inclusion of these components at Seawall Lot 337 would not change the site plan or street configuration, Design Controls, or building types. Development of these variants would be limited to blocks with compatible building types, and their inclusion would not increase the overall development intensity on the project site or proposed square footage of an individual building. Any one or all of the variants could be considered for approval in additional to the proposed project. A description of each variant and an analysis of their impacts are included in Chapter 6, *Variants*.

LAND USE ASSUMPTIONS

This Draft EIR analyzes two different land use assumptions at Seawall Lot 337 to capture the full range of possible land uses that could be developed on the project site. Two land use assumptions for Seawall Lot 337 have been identified as High Commercial and High Residential. Both assumptions would include the same building program, except for on Blocks H, I, and J. Therefore, both assumptions include 1.05 million gsf of residential uses on Blocks A,

D1, F, and K; 972,000 gsf of commercial uses on Blocks B, C, E, and G; 177,000 gsf of lower-floor active/retail uses at these blocks; the 837,200 gsf, 10-level parking structure on Block D2;[30] and the 227,000 gsf, three-level parking garage under Mission Rock Square.

As summarized in Table 2-5 (page 2-24) and illustrated in Figure 2-7 (page 2-33), the High Commercial Assumption would include a lower number of residential units (approximately 1.1 million gsf) and a higher number of commercial (approximately 1.4 million gsf) and active/retail (244,800 gsf) spaces. Flexible Blocks H, I, and J would include primarily commercial uses. As shown in Table 2-5 and in Figure 2-8 (page 2-34), the High Residential Assumption would include a higher number of residential units (approximately 1.6 million gsf) and a lower number of commercial (approximately 972,000 gsf) and active/retail (approximately 241,000 gsf) uses. Under the High Residential Assumption, flexible Blocks H, I, and J would include primarily residential uses. Additional information on the High Commercial and High Residential Assumptions is provided below.

HIGH COMMERCIAL ASSUMPTION

The High Commercial Assumption would consist of a mix with fewer residential uses and more commercial uses. This assumption would include residential uses on Blocks A, D1, F, and K, with development of up to 1,000 units across the four designated residential buildings.

Under the High Commercial Assumption, Blocks B, C, E, G, H, I, and J would contain commercial uses, providing a total of approximately 1.4 million gsf of commercial space. In addition, the High Commercial Assumption would include approximately 244,800 gsf of active/retail/production uses in the lower floors that would be spread across each development block and in the lower floors of the parking structure on Block D2. The exact locations of active/retail development on the site would be determined following approval of the proposed project based on market conditions.

The building heights assumed for the High Commercial Assumption are illustrated in Figure 2-7 (page 2-33). As shown, the residential buildings on Blocks A, D1, and F could reach building heights of 240 feet (approximately 23 stories), and Block K could reach a building height of 120 feet (approximately 11 stories). Commercial buildings would range in height from 90 feet (approximately 7 stories) on Blocks E, H, I, and J to 190 feet (approximately 13 stories) on Blocks C and G. The portion of Block D with the parking garage (Block D2) would be

[30] Block D would include two separate, but attached, buildings totaling approximately 1.1 million gsf (Blocks D1 and D2). The building along Third Street (D1) would include approximately 241,000 gsf of residential. The parking structure building on the remainder of Block D (D2), adjacent to Bridgeview Street, would be approximately 837,200 gsf, plus approximately 14,000 gsf of active/retail on the lower floors.

TABLE 2-5. PROPOSED SEAWALL LOT 337 DEVELOPMENT BY ASSUMPTION

	High Commercial Assumption[a]	High Residential Assumption[a]
Residential[b]	1.1 million gsf (1,000 units)	1.6 million gsf (1,600 units)
Commercial	1.4 million gsf	972,200 gsf
Active/Retail/Production	244,800 gsf	241,000 gsf
Total Mixed-Use Square Footage	***2.7 million gsf***	***2.8 million gsf***
Block D2 Parking Structure	837,200 gsf (2,300 spaces)	837,200 gsf (2,300 spaces)
Mission Rock Square Parking Garage	227,200 gsf (700 spaces)	227,200 gsf (700 spaces)
Total gsf	***3.8 million gsf***	***3.9 million gsf***
Use by Block[c]		
Block A	Residential	Residential
Block B	Commercial	Commercial
Block C	Commercial	Commercial
Block D	Parking /Residential	Parking /Residential
Block E	Commercial	Commercial
Block F	Residential	Residential
Block G	Commercial	Commercial
Block H (Flexible)	Commercial	Residential
Block I (Flexible)	Commercial	Residential
Block J (Flexible)	Commercial	Residential
Block K	Residential	Residential

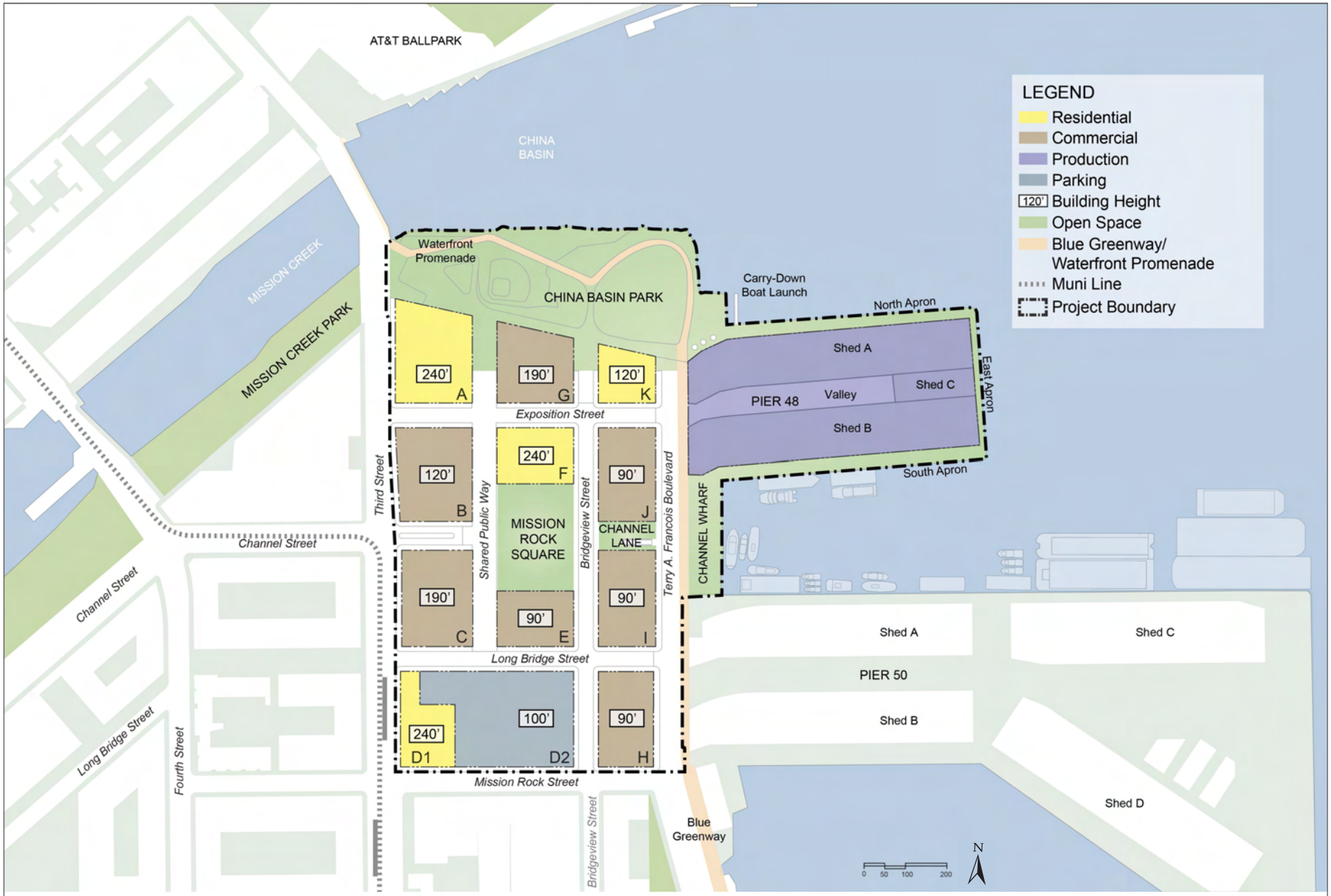
Source: Seawall Lot 337 Associates, LLC, 2015

Notes:

a. Square footages are rounded to the nearest one hundred, with the exception of square footages greater than 1 million, which are rounded to the nearest one hundred thousand.

b. Individual dwelling units could range in size from 220 gsf to 1,400 gsf.

c. All blocks would include ground-floor active/retail/production space.

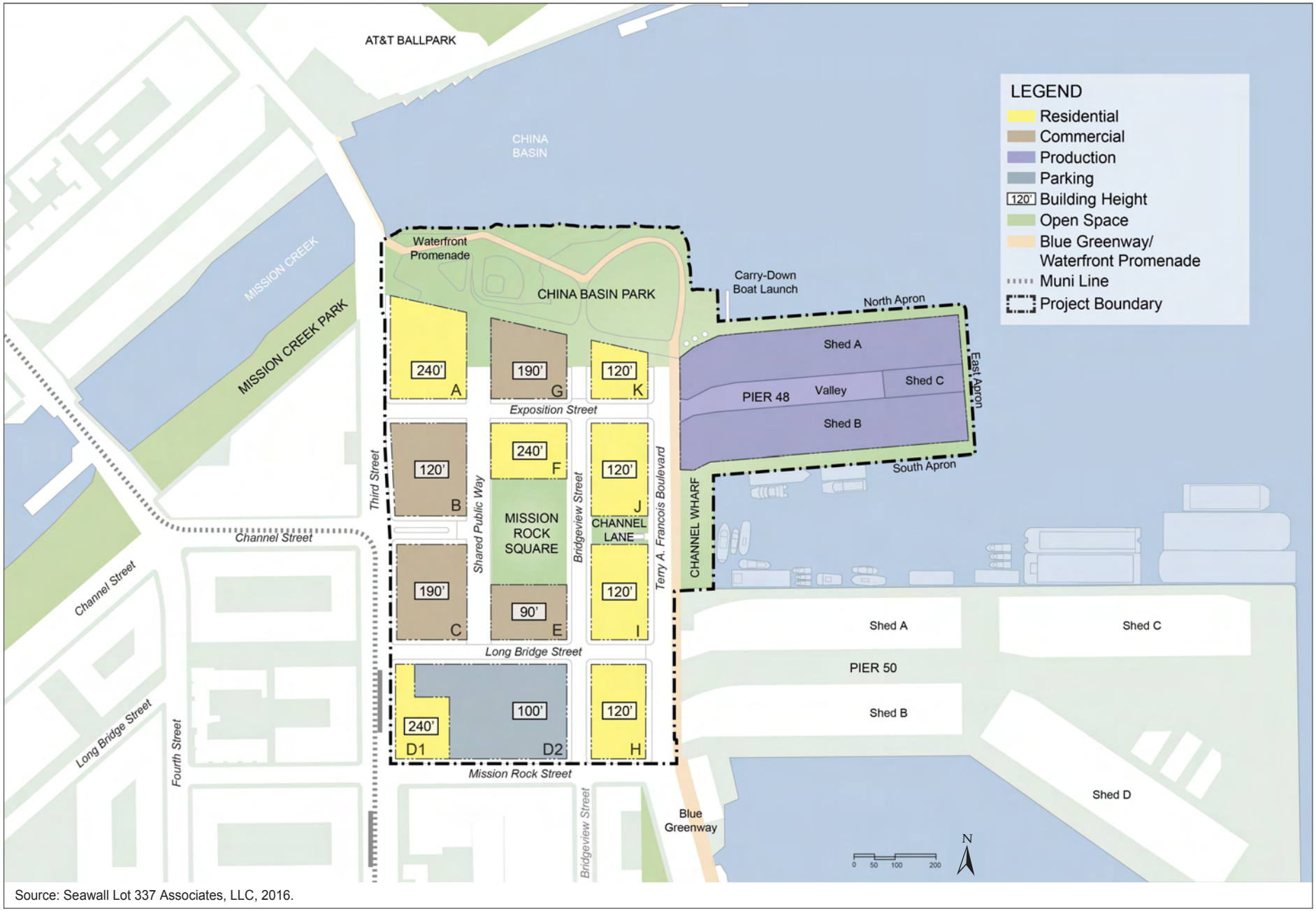


Source: Seawall Lot 337 Associates, LLC, 2016.

Graphics ... 00336.13 (3-21-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 2-7
Proposed Site Plan Under the High Commercial Land Use Assumption



Source: Seawall Lot 337 Associates, LLC, 2016.

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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 2-8
Proposed Site Plan Under the High Residential Land Use Assumption

approximately 100 feet in height. In addition, the tops of upper buildings (towers) may include nonhabitable area elements, or wall extensions, that would extend up to 20 feet (40 feet on Block F) vertically above the maximum designated building height.

HIGH RESIDENTIAL ASSUMPTION

The High Residential Assumption would consist of a mix with more residential uses and fewer commercial uses. This assumption would include residential uses on Blocks A, D1, F, H, I, J, and K, with development of up to 1,600 units (1.6 million gsf) across the seven designated residential buildings. Blocks B, C, E, and G would contain commercial uses, providing a total of approximately 972,000 gsf of commercial space. Approximately 241,000 gsf of active/retail space would be included in the lower floors of all development blocks.

The building heights assumed for the High Residential Assumption are illustrated in Figure 2-8 (page 2-34). As shown, the residential buildings on Blocks A, D1, and F could reach a maximum building height of 240 feet (approximately 23 stories), and Blocks H, I, J, and K could reach a maximum building height of 120 feet (approximately 11 stories). Commercial buildings would range in height from 90 feet (approximately 7 stories) on Block E to 190 feet (about 13 stories) on Blocks C and G. The portion of Block D with the parking garage (Block D2) would be approximately 100 feet in height. In addition, the tops of upper buildings (towers) may include nonhabitable area elements, or wall extensions, that would extend up to 20 feet (40 feet on Block F) vertically above the maximum designated building height.

OPEN SPACES AND PARKS

The proposed project's approximately 8.0 acres of new and expanded open spaces would include China Basin Park, Mission Rock Square, Channel Wharf, Channel Lane, a waterfront promenade, pedestrian paseos, and new public access on the apron of Pier 48. The parks would be connected to a new pedestrian-oriented street network, including the pedestrian-centered Shared Public Way, which would connect China Basin Park to Long Bridge Street. These areas would also provide access to the City's proposed Blue Greenway. Each of the new and expanded open space and park features is described in more detail below. The proposed parks and open spaces are illustrated in Figure 2-9 (page 2-37).

Open space at Seawall Lot 337 would provide a variety of recreational opportunities in parks, plazas, and promenades for the neighborhood. Landscaping and trees at the open spaces and streetscapes would be consistent with the proposed landscape plan and Design Controls as well as any associated mitigation measures adopted as part of the CEQA review and project entitlement process. The street trees and open space trees would also be an element of the Mission Rock master tentative map and installed later with each phased final map and adjacent streetscape and open space improvements.

Trees could be native or climate adapted, ranging in height at maturity from 25 to 60 feet. In particular, it is expected that trees for the majority of the project site would range in height from 30 to 45 feet, while trees at China Basin Park would be approximately 50 to 60 feet in height at full maturity. Trees throughout the project site could include species such as Monterey cypress, New Zealand Christmas tree, red-flowering gum, Chinese elm, strawberry tree, southern live oak, ginkgo, freeman maple, Brisbane box, red oak cultivar, Victorian box, California pepper, cork oak, or melaleuca. Native or climate-appropriate grasses, shrubs, and ground cover would also be planted. Permanent public art pieces would be located in China Basin Park, Mission Rock Square, and Channel Wharf. In addition, stormwater treatment gardens[31] would be integrated within the program and uses of open spaces.

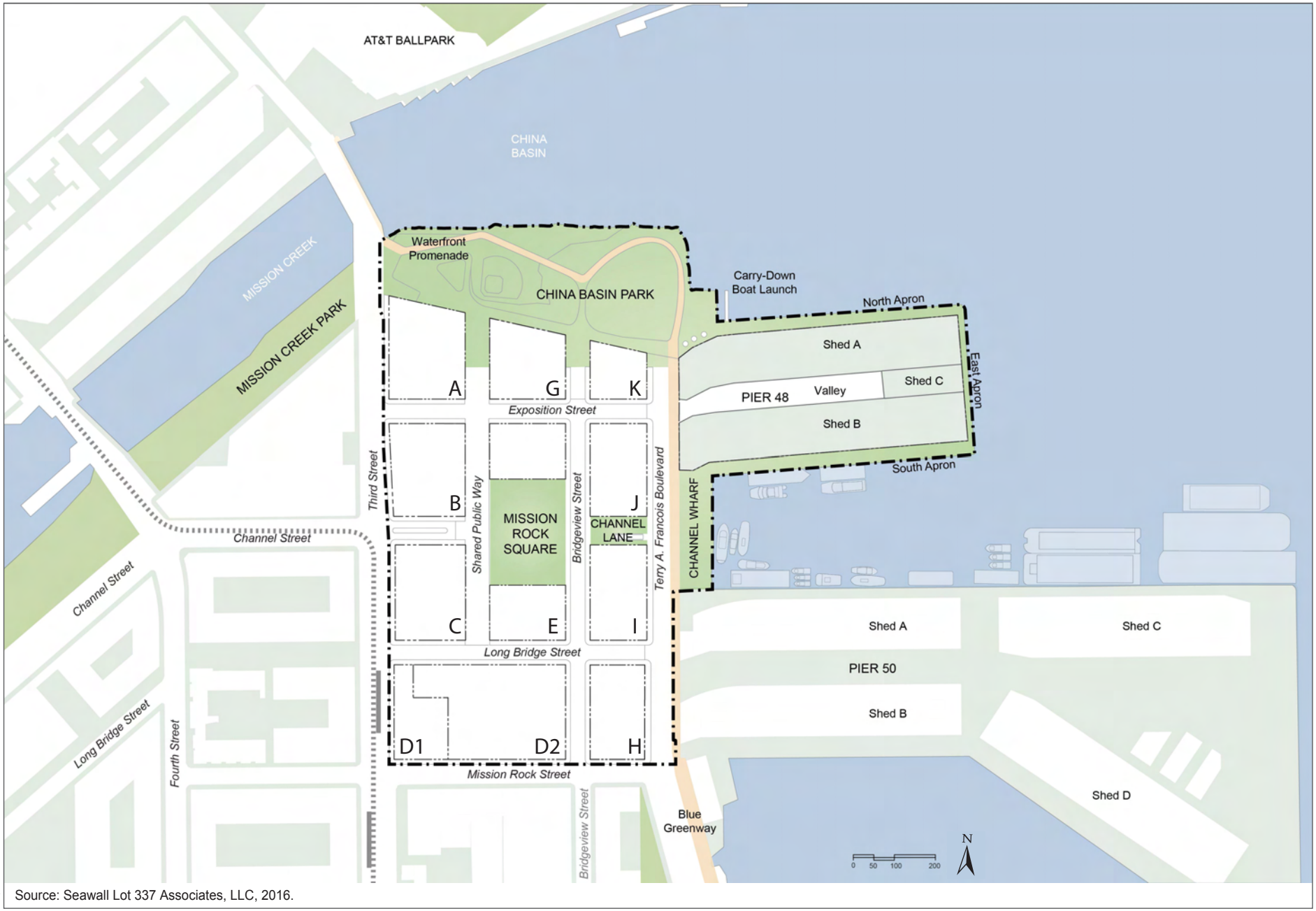
The public parks and open spaces would remain under Port ownership but could be programmed and managed by the project sponsor. The project sponsor would be responsible for the initial tree planting and the installation of associated improvements, such as irrigation, as applicable, as well as initial warranties and maintenance. The project sponsor's obligations related to the initial planting of landscaping and trees and the installation of irrigation would be secured by an improvement agreement, permits, and applicable security, which would include typical warranty provisions to ensure that the initial planting and installation obligations would be met. The design and programming of this open space would be subject to Port approval and BCDC major permit conditions, as applicable.

It is expected that ongoing maintenance of the new and expanded parks and open spaces would be the responsibility of the onsite neighborhood association that would be established with the proposed development once operational. Maintenance would be based on approved maintenance budgets. The proposed project's operating governing documents (e.g., Covenants, Conditions, and Restrictions [CC&Rs]) would ensure that the maintenance of any landscaping would be adequately funded. Furthermore, street trees would be inspected and maintained and, as necessary, replaced consistent with the park management and maintenance agreement. This agreement would include a plan and standards for maintenance and be approved as part of the entitlements for the proposed project. The Mission Rock tenants association would have responsibility for maintenance, and special taxes for maintenance could be levied by a Mello-Roos Community Facilities District (CFD) to provide a certain funding source for the life of the project.[32] Further specifics of the funding and maintenance plan would be specified in the final Mission Rock transactional documents and related project approvals.

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[31] Stormwater treatment gardens function as soil- and plant-based filtration devices to remove pollutants in runoff through a variety of physical and biological treatment processes.

[32] The Mello-Roos Community Facilities Act of 1982 allows any county, city, special district, school district, or joint powers authority to establish a Mello-Roos CFD, which allows for financing of public improvements and services. The services and improvements that the Mello-Roos CFDs can finance include streets, sewer systems, and other basic infrastructure; police protection; fire protection; ambulance services; schools; parks; libraries; museums; and other cultural facilities.



Source: Seawall Lot 337 Associates, LLC, 2016.

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Figure 2-9
Proposed Open Spaces and Parks

The hours of operation for the proposed parks would be similar to the hours at other parks under Port jurisdiction, which generally open at 5:00 a.m. and close at 12:00 a.m. Special events or assembly uses could occur at the proposed parks on a year-round basis, including small concerts, picnics in the park, Sunday Streets, and other cultural events. The proposed project would not schedule an on-site major special event (i.e., an event not related to a Giants game) with an anticipated attendance of approximately 5,000 persons during the same period of time as a dual Warrior arena and ballpark major event. Table 2-6, page 2-38, summarizes the proposed parks and open spaces.

TABLE 2-6. PROPOSED PARKS AND OPEN SPACES

Open Space	Acreage	Proposed Amenities
China Basin Park	4.4[a]	Lawn open space, special-event/assembly area for about 5,000 people, waterfront café and kiosks, Little League baseball field, picnic area, and promenade
Mission Rock Square	1.1	Multi-use lawn, plaza, café pavilion, and special-event/assembly area for about 2,000 people
Channel Wharf	0.5	Paved, active maritime wharf; views of working vessels; other maritime uses; and public art
Channel Lane	0.2	Pedestrian-only street with special paving and lighting
Pier 48 Aprons/ Waterfront Promenade	1.1	Bicycle/pedestrian pathways, waterfront promenade, and maritime access
Pedestrian Paseos	0.6	Pedestrian-only connections between streets and open spaces, lined with cafes and shops
Total	***7.9***	

Source: Seawall Lot 337 Associates, LLC., 2015

Note:

[a.] Acreage includes the existing 2.2-acre China Basin Park.

CHINA BASIN PARK

The existing 2.2-acre China Basin Park was opened to the public in 2001 in connection with the AT&T Park project. The park is located just south of China Basin (across the channel from AT&T Park). The proposed expansion to 4.4 acres (an expansion of 2.2 acres) would include the existing east-west portion of Terry A. Francois Boulevard and, upon completion, be bounded by China Basin to the north, the Bay to the east, Pier 48 to the southeast, proposed Blocks A, G, and K to the south, and Third Street/Lefty O'Doul Bridge to the northwest. This park would serve to connect the northern waterfront open space network via the Blue Greenway to the existing or planned central waterfront open space networks of Mission

Bay, Pier 70, Hunters Point, and Candlestick Point to the south. In addition, as discussed in more detail below, China Basin Park would serve as a buffer between the Bay and the rest of the project site. Program areas and elevation relationships would be designed to accommodate up to 66 inches of sea-level rise and a 100-year flood event while keeping most of the park accessible during a flood event.

China Basin Park would include a range of activities that would be connected by the Blue Greenway to a waterfront promenade that would offer waterfront access and views. The eastern portion of China Basin Park would include the Great Lawn, which could be a landscaped green space that would slope gently toward the Bay. This space would accommodate light recreational uses and large outdoor gatherings. During festivals, holidays, and celebrations, the Great Lawn could accommodate up to approximately 5,000 people. The northwest corner of the Great Lawn could include a waterfront café with outdoor seating.

The central portion of China Basin Park, across from Block G, could include an active recreation area for children, a family play area, food kiosks, and stormwater treatment gardens. The western portion of the park, adjacent to Third Street, would include a pedestrian plaza that would connect Lefty O'Doul Bridge to Pier 48 and stormwater treatment gardens. An esplanade along the southern portion of China Basin Park would include kiosks and small stand-alone retail spaces. A pedestrian path in the Parkfront Zone, as discussed above, would connect the park to lower-floor active/retail uses on Blocks A, G, and K.

The China Basin Park promenade would be located at the Bay's edge, along the length of the project site extending from Third Street in the west to Terry A. Francois Boulevard in the east, and offer views of the Bay Bridge, Lefty O'Doul Bridge, AT&T Park, the Bay, and the East Bay hills beyond. The promenade could include bayfront habitat gardens, overlooks, boardwalks, and waterfront picnic grounds.

MISSION ROCK SQUARE

The 1.1-acre Mission Rock Square would be located in the center of Seawall Lot 337. Mission Rock Square would be framed by a mix of residential and commercial uses above active/retail uses on the lower floors of the surrounding blocks. Channel Lane would connect Mission Rock Square to the proposed Channel Wharf to promote pedestrian connections to the waterfront. Mission Rock Square would be able to accommodate assembly and special-event uses for up to approximately 2,000 people.

Channel Street extends into the project site, creating a pedestrian connection from Mission Bay to Mission Rock Square, Channel Lane, and the waterfront at Channel Wharf. These connections would offer views of the water and provide access from the adjacent neighborhoods at the project site and Mission Bay to the Bay. The design of Mission Rock Square, Channel Street, and Channel Lane would connect proposed project open space to the existing Mission Creek Park, the Blue Greenway, and the bayfront.

CHANNEL WHARF AND CHANNEL LANE

A new open space at Channel Wharf would be constructed in the location of the current marginal wharf between Piers 48 and 50, east of Terry A. Francois Boulevard. Channel Wharf would be a 0.5-acre paved plaza with public art, seating, and a drop-off area leading to the recreational uses at the project site. It would offer direct public access to the bayfront and serve as an access point to the Bay for industrial activities occurring at Pier 48, the Pier 48 marginal wharf, and at Pier 50.

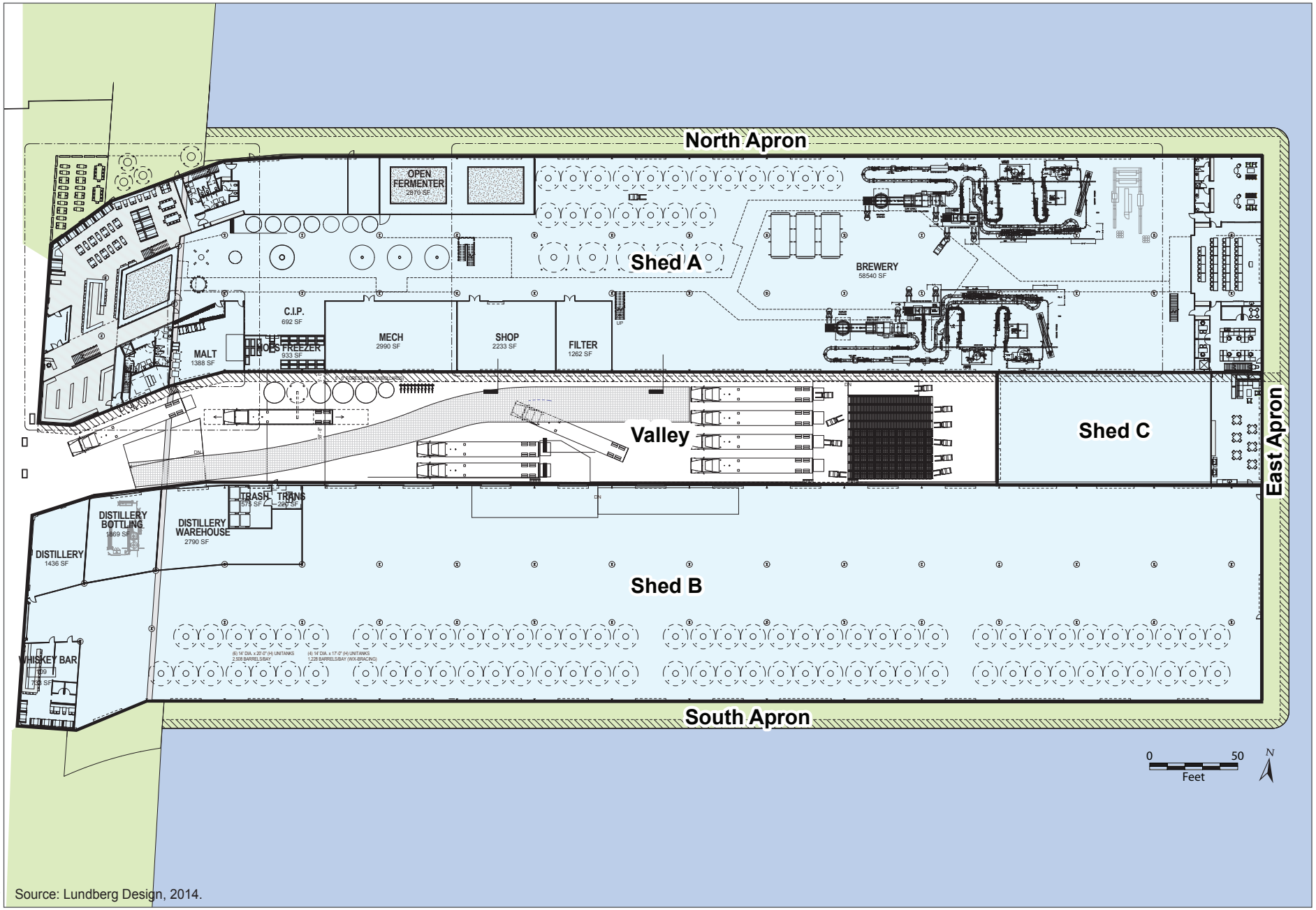
Channel Lane, approximately 0.2 acre, would link Mission Rock Square to the Bay edge. Gathering spaces would be provided on either side of a ramp that would serve as egress/ingress for the Mission Rock Square parking garage. Except for the ramp to the parking garage, Channel Lane would not be accessible to vehicles and could include features such as overhead lighting, special paving, and shade-tolerant plant species and trees.

PIER 48 APRONS/WATERFRONT PROMENADE

The existing Pier 48 aprons, totaling 1.1 acres in size, require reconstruction for seismic and safety reasons. A waterfront promenade would be constructed on the aprons, which would be improved for public access, the waterfront promenade and maritime operations. The northern apron of Pier 48 would be prioritized for public access and accessible for maritime uses, and the eastern and southern aprons would be prioritized for maritime uses and open to the public, where there are no safety conflicts among uses and the configuration of the aprons can accommodate it. The northern apron would connect to the publicly accessible Blue Greenway.[33] The northern apron could also include boat mooring capabilities for potential water taxis or excursion vessels. Publicly accessible picnicking and beer garden space would connect Pier 48 to China Basin Park's waterfront promenade.

A personal watercraft floating dock, or carry-down boat launch, would be located at the northwest portion of Pier 48, along the northern apron, as part of the Blue Greenway system. The boat launch would be designated for public access to launch human-powered watercraft (such as kayaks) into the Bay. This location is sheltered from wave action and located close to Terry A. Francois Boulevard, which would include time-limited parking spaces for watercraft drop-off. Components of the boat launch would float and would not require the installation of piles.

[33] As discussed above, the Blue Greenway is a City-sponsored project dedicated to planning and creating a public open space and water access network in southeastern San Francisco, from Mission Creek to the southern San Francisco county line. The Project open space system, in particular China Basin Park, Channel Street, and the northern apron of Pier 48, would be designed and constructed with the intent of furthering the City's vision of reconnecting people to the water through water-oriented design and programming.



Source: Lundberg Design, 2014.

Graphics ... 00336.13 (3-21-2017)

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Figure 2-10
Proposed Pier 48 Ground-Floor Site Plan

PIER 48

The project sponsor proposes to repurpose the existing Pier 48 sheds and valley to accommodate a range of uses, including industrial/manufacturing, associated general office and storage, retail, restaurant, tour and exhibition space, and event-related uses. In addition, the proposed project would be designed to accommodate maritime operations on the aprons and public access onto Channel Wharf. The proposed industrial use would occupy all usable interior shed space and the valley space of Pier 48.

The Pier 48 sheds and bulkhead wharf would be rehabilitated consistent with the SOI Rehabilitation Standards, the SOI Guidelines, and the Port Historic Guidelines, as described in further detail below. At proposed project completion, the Pier 48 sheds would include approximately 209,000 gsf of useable space, consisting of the 182,000 gsf industrial use, 12,000 gsf restaurant, 1,400 gsf active/retail area, and 14,000 gsf exhibition space/museum. The tenant would also use the Pier 48 valley for loading and storage. As summarized in Table 2-7, below, alterations to the interior of the Pier 48 sheds and the aprons could result in a change in Pier 48 square footages compared with existing conditions. The building site plans are depicted in Figures 2-10 and 2-11 (pages 2-43 and 2-52).

TABLE 2-7. COMPARISON OF EXISTING AND PROPOSED PIER 48 BUILDING AREA

	Existing (sf)[a]	Proposed (sf)[a]	Net Change
Shed A – Ground Floor	84,600	83,600	-1,000[b]
Shed A – Mezzanine	--	28,500	+28,500
Shed B[c]	87,000	87,000	--
Shed C[c]	9,600	9,600	--
Total Structures	**181,200**	**208,700**	**+27,500**
Valley	33,800	33,800	--
Aprons	46,000	46,000	--
Total Pier 48	***261,000***	***288,500***	***+27,500***

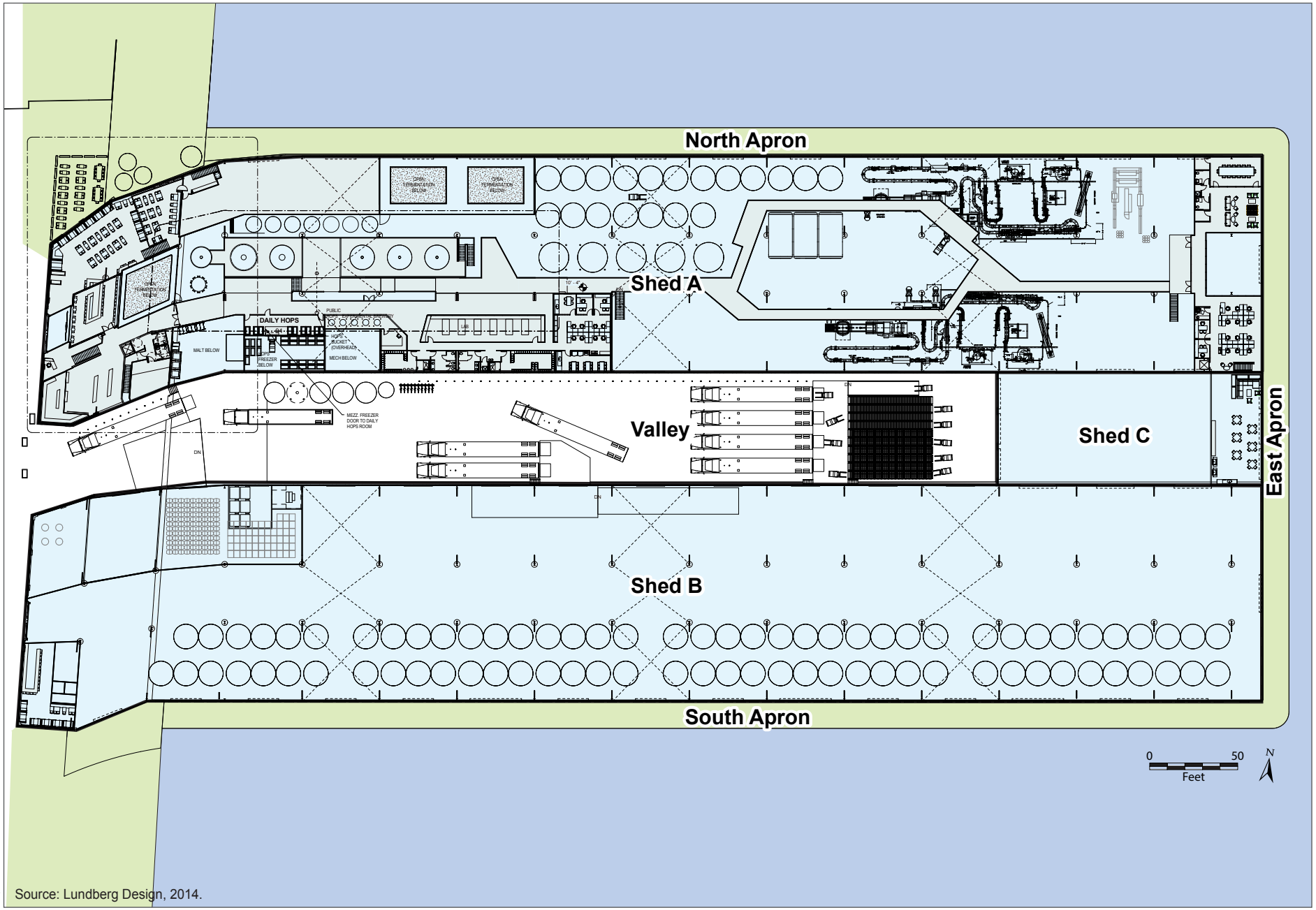
Source: Lundberg Design, 2015

Notes:

a. Square footages are rounded to the nearest one hundred.

b. The reduction in 1,000 gsf at Shed A is due to the creation of infill glass walls at each of the north warehouse rollup doors, which are set back from the original line of the building. While the proposed project would not structurally alter Shed A, this would reduce the calculated enclosed area of the building.

c. Sheds B and C would only include a ground floor; no mezzanine would be constructed.



Source: Lundberg Design, 2014.

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Figure 2-11
Proposed Pier 48 Mezzanine-Level Site Plan (Shed A Only)

PIER 48 SEISMIC UPGRADE AND STRUCTURAL REHABILITATION

As described above, the Pier 48 substructure includes the east apron. The northern and southern aprons are separate wooden structures and independent of the concrete Pier 48 substructure. The entire northern apron (approximately 640 feet long) and the east end of the southern apron (approximately 370 feet long) are currently unsafe and in need of repair.

Seismic upgrades, which would occur over an approximately 16-month period, are necessary in order to support the proposed uses at Pier 48. The scope of the seismic upgrade consists of replacing 675 existing piles with 106 new piles, as described below. The 106 new piles would be located below a new, heavily reinforced concrete apron. The modified portion of the aprons would be approximately 12 feet wide, 6 feet deep, and 40 feet long and located on both the north and south perimeter of Pier 48, replacing portions of the exterior pier deck at those locations.

Along with demolition of the existing perimeter deck, approximately 675 existing 24-inch-round creosote-treated wood piles would be extracted with a vibratory extractor to make way for the new piles. The new piles would include both precast concrete and cylindrical steel-cased piles. Approximately 62 precast concrete piles would be installed. These are anticipated to be 30 feet in length and either 18 or 24 inches square. Their installation would require approximately 100 blows per pile, with three or four piles installed per day.

Approximately 44 steel-cased, concrete-filled piles would also be installed. These are anticipated to be approximately 120 feet in length and either 4 or 6 feet in diameter. The piles would not require pile driving because the steel casings would be installed with a vibratory hammer. After the casings are installed, each pile would be drilled to remove soil; the soil would be replaced with reinforced concrete. On average, one or two piles would be installed per day. Construction activities (including installation of both concrete and cylindrical steel-cased piles) at Pier 48 would occur over the course of approximately 16 months.

The pier deck would be removed first by saw cutting the slab and breaking it up, then catching it with netting or on platforms below. Any piles that either break during removal or refuse to be extracted would be cut off below the mudline. A project-specific debris management plan would be developed among the marine contractor, general contractor, and development team. The interior piles, which support Pier 48, would not be replaced. The interior pier structure is reported to be in good condition for use; it was seismically upgraded in the past 10 to 15 years.

On portions of the two aprons that would be used to berth vessels (the eastern and southern aprons), fenders and mooring systems may be installed. Other portions of the pier that are used for public access (northern apron) may require the installation of guard rails, benches, and lighting. The project sponsor proposes changes to the pier structure and shed buildings in compliance with all applicable regulations; however, the specific modifications and improvements would be contingent upon the final intended use of the facilities and subject to appropriate regulatory approvals.

INDUSTRIAL USE

The proposed industrial use, specifically analyzed as a proposed brewery use, would construct production facilities for brewing, distilling, packaging, storing, and shipping product, in addition to establishing a brewing-related museum and a restaurant. Public tours of the brewing facilities would be offered, and an educational facility related to the brewery could be created at Pier 48. The approximate breakdown of square footage for the proposed operations at Pier 48 are shown in Table 2-8, below.

TABLE 2-8. PROPOSED USES AT PIER 48 AT FULL BUILDOUT

	Square Footage (gsf)[a,b]
Brewery/Distillery	181,700[b]
Restaurant	11,900
Retail	1,400
Exhibition/Museum	13,700
Total Building	**208,700**
Valley	33,800[c]
Aprons	46,000
Total Pier 48	***288,500***[d]
Net Increase in sf	***27,500***

Source: Lundberg Design, 2015

Notes:

a. Square footages are rounded to the nearest one hundred.

b. Square footages include enclosed spaces within Sheds A, B, and C and the proposed mezzanine within Shed A.

c. Although the valley is included within the existing square footage for Pier 48, under the proposed project, this area would not be permanently enclosed and is not considered useable interior space. Therefore, it is excluded from square footage calculations for the building.

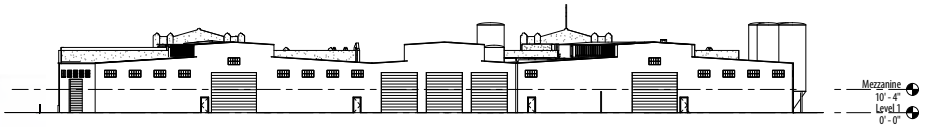
d. Includes building square footage and not building envelopes.

BUILDING MODIFICATIONS AND OPERATIONS

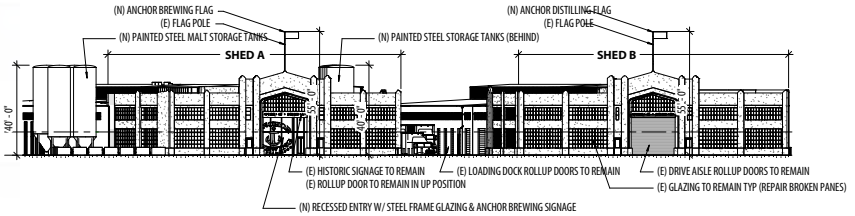
No exterior expansion of the historic Pier 48 shed structures would occur. Exterior modifications would be limited to refurbishing windows; installing door systems, storefront windows within existing roll-up door openings, and the potential new window openings (in nonhistoric portions [Shed C] of Pier 48); and refurbishing certain areas of the roof. The proposed project would include the installation of a light-weight temporary canopy over a portion of the open-to-sky valley area, minor loading area modifications, and installation of removable grain and yeast silos, up to 50 feet tall, within the valley (approximately six) and to the north of Shed A at the north apron (approximately four). The building elevations are shown in Figures 2-12 and 2-13, pages 2-46 and 2-47.



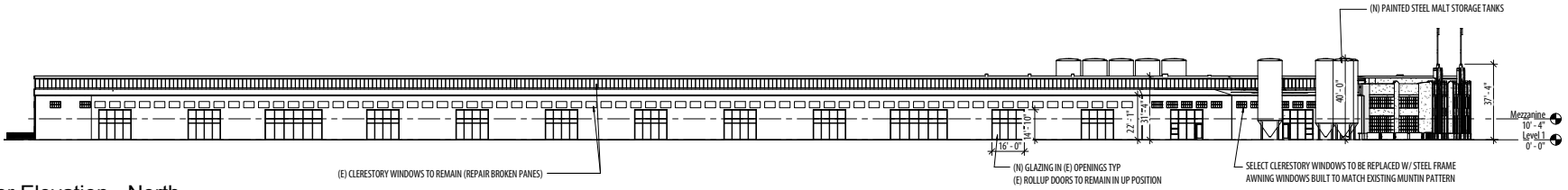
Entry View From Street



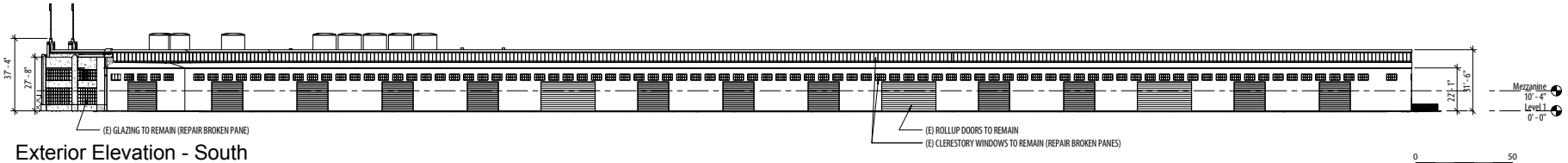
Exterior Elevation - East



Exterior Elevation - West



Exterior Elevation - North



Exterior Elevation - South

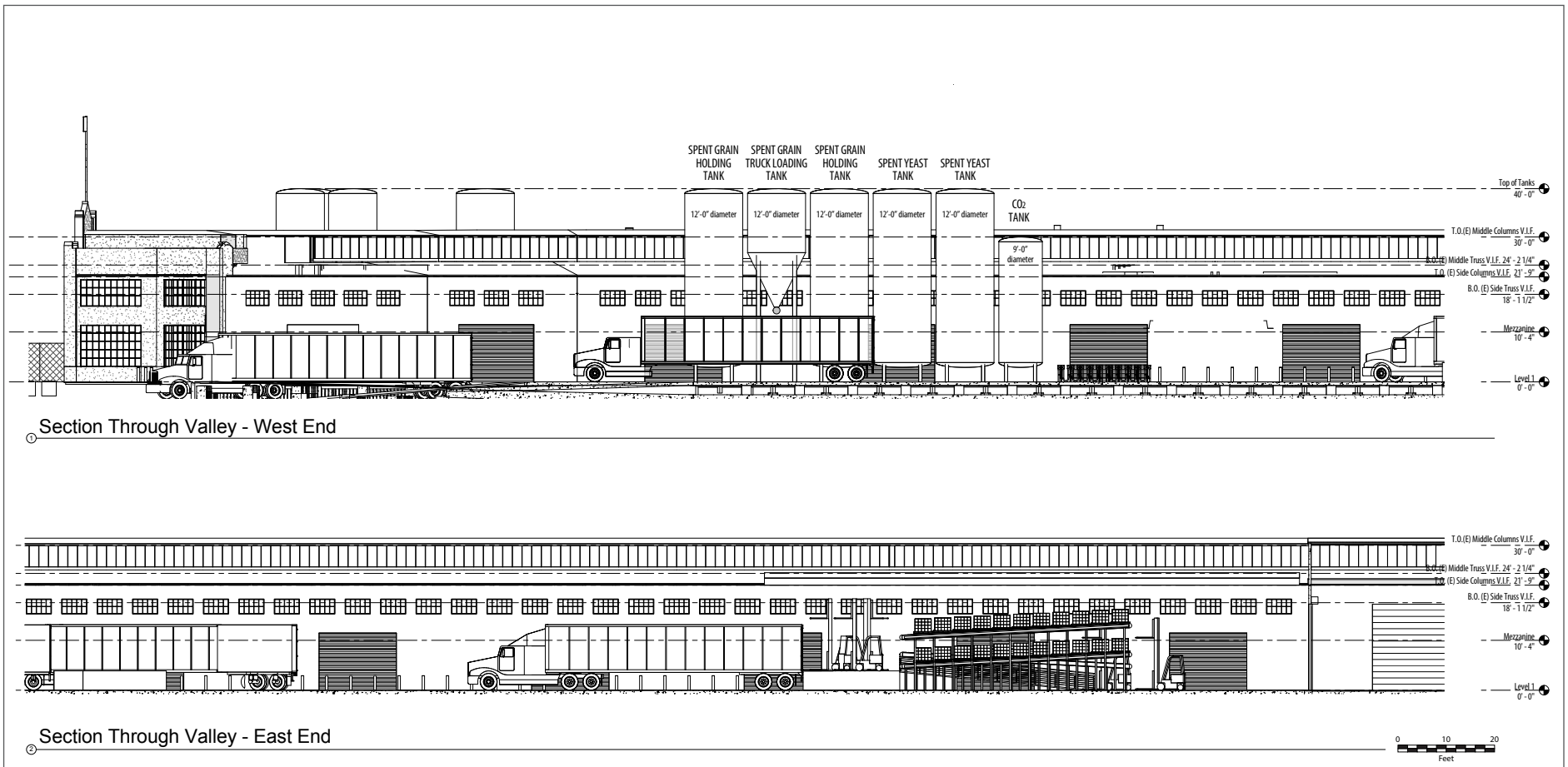
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Feet

Source: Lundberg Design, 2014.

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Figure 2-12
Proposed Pier 48 Shed Elevations



Source: Lundberg Design, 2014.

Graphics ... 00336.13 (3-21-2017)

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Figure 2-13
Proposed Pier 48 Valley Elevations

Entry signage on the building façade would be recessed to preserve the historic integrity of the sheds. Changes to the roof would be limited but may include penetrations to accommodate new flues, vents, and potentially the installation of south-facing photovoltaic cells. The valley would be lower than the midpoint of the sloping roof and would not be visible above the Pier 48 roofline. However, the spent-grain tanks that would be located in the valley would extend beyond the roof lines and would be visible. An outdoor beer garden would be located to the north and west of Shed A in an appropriately enclosed open-air area.

The main interior modification to Pier 48 would include the construction of a mezzanine in Shed A that would "float" and not be attached to the historic concrete shed walls. The mezzanine would provide approximately 28,500 gsf of space for a taproom, restaurant, museum, brewhouses, labs, lunch rooms, lockers, offices, circulation areas, mechanical equipment, conference rooms, lounges, stairs, and bathrooms. A catwalk structure would be installed within the interior of Shed A for circulation associated with beer production and public tours of the facility.

Other interior shed modifications would include refurbishing the floors, completing various structural repairs, and addressing potential hazardous materials issues,[34] as required. Partition walls would be constructed within the sheds to separate retail and brewing facilities from storage and office/support areas. These would be designed to maintain sightlines and the historic open two-story volume and feel or experience of the enclosed shed space.

The rehabilitation and reuse of Pier 48 would be consistent with the SOI Rehabilitation Standards and the SOI Guidelines. The SOI Rehabilitation Standards are a series of standards regarding the maintenance, repair, and replacement of historic materials as well as the design of any additions or alterations. The companion guidelines offer general design and technical recommendations to assist in applying the SOI Rehabilitation Standards to a specific property. Together, the SOI Rehabilitation Standards and the SOI Guidelines provide a framework and guidance for decision-making regarding work or changes to a historic property.

The Port Historic Guidelines define how the SOI Rehabilitation Standards and the SOI Guidelines should be interpreted and applied to historic resources within The Embarcadero Historic District, thereby ensuring responsible management and stewardship. The Port Historic Guidelines focus on pier and bulkhead wharf substructures and help define the parameters for the repair, maintenance, or alteration of the pile foundations, substructures, and the decks of

[34] Because of the age of Pier 48, hazardous building materials could be present, including asbestos, polychlorinated biphenyls (PCBs), lead-based paint, and mercury. Modifications to the Pier 48 structure could upset these materials. Testing, removal, and disposal of these hazardous materials would be subject to various federal, state, and local regulations related to proper handling and disposal of hazardous materials. The proposed project would be required to comply with these regulations to limit public exposure to such hazardous materials. Refer to Section 4.N, *Hazardous Materials*, for further discussion.

piers and bulkhead wharfs upon which pier sheds, bulkhead buildings, and other waterfront structures sit. Section 4.D, *Cultural Resources*, discusses how the proposed project would comply with the SOI Rehabilitation Standards, SOI Guidelines, and Port Historic Guidelines.

The brewery and distillery operations, including warehouse packaging, would be located within Sheds A, B, and C, encompassing approximately 288,500 gsf, including the Shed A mezzanine and aprons. Operations associated with the facility would also occur in the 33,800 gsf open valley. The new brewery would have primary truck loading access within the valley. Pier 48 would also include retail (including a spirits bar), exhibition facility, and meeting room uses in the bulkhead portion of Shed B. All exterior and interior modifications described for Shed B, above, would occur in Phase 2 of construction, described below under "Construction."

At full buildout, the facility would operate 7 days per week and employ approximately 200 people. There would be three shifts at the brewery per weekday, with approximately 75 total employees onsite per day. On weekends, there would be three shifts per day, with approximately 30 total employees onsite per day. Staffing levels for the restaurant and visitor center are unknown at this time but are not expected to exceed 50 employees. It is anticipated that the proposed facilities at Pier 48 would attract approximately 500 visitors per day, on average, with additional visitors on game days. Self-guided tours would not be permitted. No visitor or employee parking is proposed at Pier 48 at full buildout; however, visitors and employees could park in the dedicated parking areas on Seawall Lot 337.

PIER 48 ACCESS AND DELIVERIES

Deliveries to and pick-ups from the production facility would occur by truck. Approximately 14 truck deliveries (50,000 pounds per load) would be made per day, seven days per week. In addition, approximately 20 to 25 hopper trucks, which are used to transport loose bulk commodities, per week would be needed for delivery to the site. This EIR assumes that a maximum of 18 truck deliveries per day would be required. In addition to deliveries, 12 to 20 trucks per day would haul finished goods. Therefore, operation of the industrial use would result in up to 38 daily trips (14 truck deliveries + (25 maximum weekly hopper trucks / 7 days) + 20 maximum export trips).

Truck loading and unloading activities would occur primarily in the Pier 48 valley area. Delivery trucks would use approximately 10 feet of the north end of Terry A. Francois Boulevard to back into the valley area (truck turnaround in the valley would not be possible because of its configuration). In total, truck deliveries and exports could result in up to 13,680 truck trips per year, for an average of 38 truck deliveries and exports per day. It is currently assumed that truck deliveries would occur 7 days per week, 24 hours per day. Of this total, the loading of finished goods for intermodal transit to the East Coast or international destinations could amount to approximately 1,500 containers (trucks) per year. The unloading of empty glass bottles or aluminum cans could amount to 1,000 (trucks) containers per year.

SHORELINE PROTECTION/SEA-LEVEL RISE

The Port has identified areas in its jurisdiction along the San Francisco Bay waterfront, including the project site, that would be subject to inundation during a 100-year event, assuming sea-level rise ranging from 11 to 24 inches by 2050 and 36 to 66 inches by 2100.[35] The Mission Bay neighborhood, sited on filled saltwater marsh, is one low-laying area that may be vulnerable in extreme flood events, which are predicted to be approximately 55 inches higher than current levels by 2100. Proposed measures to prevent inundation of Seawall Lot 337 during a 100-year flood under projected 2100 sea-level rise would be incorporated into the design of the proposed project. As an adaptation measure to address sea-level rise, construction for these buildings and open space uses would include elevating building pads, streets, and sidewalks, and landscape areas within the streetscape on pile-supported structures. Nonstructured park areas, representing a minority of the project site, would be raised through the placement of appropriate fill material, either over the existing grade or on top of geofoam placed on the existing grade to provide an appropriate exposure cap. The new grade would slope upward from the shoreline and pier/wharf areas to allow 66 inches of sea-level rise. To accommodate the projected sea-level rise, most proposed finished floors of the development would be set at a minimum grading height of 14.8 to 15.8 feet NAVD88 to protect against the worst-case 2100 sea-level rise projection of 15.25 feet NAVD88 and, therefore, would be above flood level with 66 inches of flooding plus a 100-year storm surge.

China Basin Park would serve as a buffer between the Bay and the rest of the project site. Under the cited 2100 scenario, China Basin Park would not be inundated, except in extreme flood events.[36] Program areas and elevation relationships would be designed to accommodate the 100-year flood event while keeping much of the park accessible. Grade changes at China Basin Park would be accomplished through a combination of tactics, including paths that would not exceed a maximum 5 percent slope. Structures and kiosks that would be permanently located within the park would be sited in areas of higher elevation and would open directly out onto the park at grade. The parking garage under Mission Rock Square would be protected by a berm or flood gate.

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[35] National Research Council. 2012. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. Washington, DC: The National Academies Press. Available: http://www.nap.edu/catalog.php?record_id=13389. Accessed: November 28, 2015.

[36] BKF Engineers, Surveyors, Planners. 2016. *Draft Mission Rock Infrastructure Plan*. September 20.

PROPOSED PARKING AND CIRCULATION

VEHICULAR, BICYCLE, AND PEDESTRIAN ACCESS AND CIRCULATION

The project site would be accessible by all modes of transportation from Third Street, Mission Rock Street, and the reconfigured Terry A. Francois Boulevard. Third Street and Mission Rock Street are outside the boundary of the project site but would include minor improvements, as described in detail below, to accommodate the increase in onsite activity. In addition, new interior multi-modal neighborhood streets would be established throughout the project site. None of the new streets would include on-street parking.

The proposed street network would connect to the surrounding Mission Bay streets and introduce additional streets to further break the blocks into walkable distances. The streets would be part of the public realm, designed to emphasize varied and safe bicycle and pedestrian access, and integrated with active ground-floor uses across the project site. All streets within the project site would be designed to comply with the intent of San Francisco's Better Streets Plan [37] standards and guidelines. The proposed project would include neighborhood streets and shared streets, as described below. The proposed street network is illustrated in Figure 2-14, on page 2-52. Additional discussion and details about the proposed parking and circulation plan are provided in Section 4.E, *Transportation*.

NEIGHBORHOOD STREETS

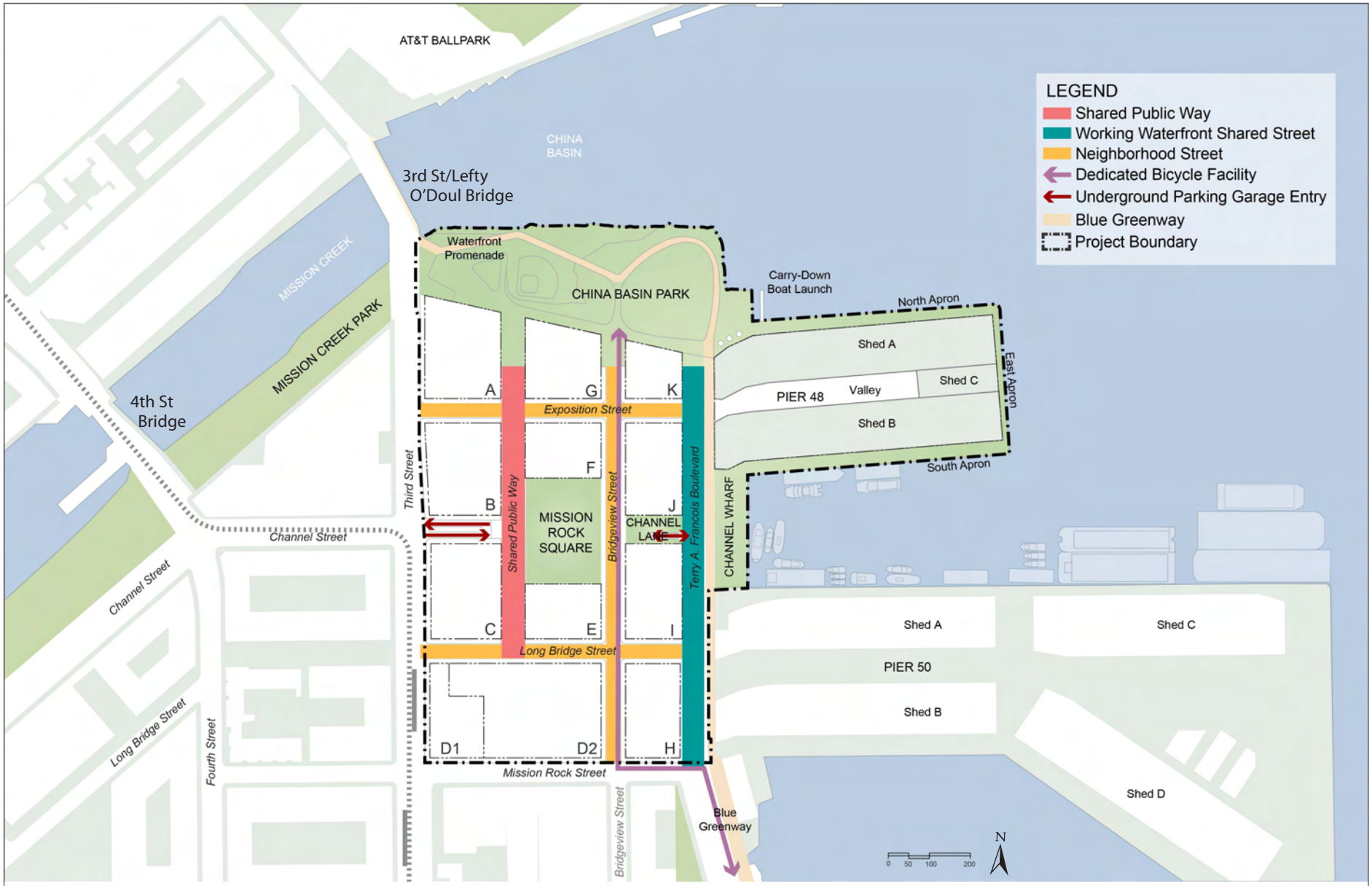
The proposed new interior neighborhood streets are Exposition Street and Long Bridge Street, each in an east-west alignment, and Bridgeview Street, in a north-south alignment. These streets would provide primary vehicular connections to and from neighboring streets. All proposed neighborhood streets would be designed as slow-traffic areas,[38] with a 10.5- to 11-foot-wide travel lane in each direction on all streets and a minimum of 12-foot-wide sidewalks on both sides of the streets. In addition, most streets would include loading areas as shown in Figure 2-15.

On Bridgeview Street, either an 8-foot-wide (plus an additional 5 feet for buffer and mountable curb) two-way Class I Cycle Track would be provided on one side of the street or 6-foot-wide Class II Bike Lanes would be provided on both sides of the street, one in each direction. On Exposition Street, a 5-foot-wide Class II Bike Lane would be provided on one side of the street, going from Terry A. Francois Boulevard to Third Street.

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[37] City of San Francisco, Planning Department. 2010. *Better Streets Plan*. Available: http://www.sf-planning.org/ftp/BetterStreets/proposals.htm. Accessed: July 31, 2013. December.

[38] "Slow-traffic areas" or "slow-traffic streets" would limit vehicular traffic speeds by installing traffic-calming devices such as curb extensions/bulb-outs.



Source: Seawall Lot 337 Associates, LLC, 2016.

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Figure 2-14
Proposed Street Network

The widths of the proposed sidewalks would reduce street crossing distances, compared to widths on a typical street. On Exposition Street, bulb-outs would be installed as a traffic-calming measure and as areas for stormwater treatment gardens. Raised crossings at the intersection of Exposition Street/Long Bridge Street and the Shared Public Way would increase pedestrian visibility and slow traffic. Street rooms[39] could be included on the sidewalks as social areas that include plantings, fixed and moveable furnishing, and kiosks.

SHARED STREETS

Shared streets are characterized by a design that prioritizes pedestrian access over vehicular circulation. At the project site, the Shared Public Way and Terry A. Francois Boulevard would be designed as shared streets. These streets would provide pedestrian access, circulation, and use and complement the ground-floor activities of surrounding buildings. The Shared Public Way would conform to the applicable street typology, as defined in the San Francisco Better Streets Plan and characterized as a street without curbs and affording minimal one-way vehicular access for drop-off and loading. Terry A. Francois Boulevard would conform to the working waterfront and shared streets typology, with manufacturing activities that would encourage bicycle and pedestrian access to the waterfront.

The proposed new interior Shared Public Way would be located one block east of Third Street, extending from Long Bridge Street to the south to just beyond Exposition Street to the north. This Shared Public Way, which would prioritize pedestrians over bicycles and automobiles, would consist of a 60-foot-wide paved surface with no curbs (but possibly gutters). The prioritized pedestrian right-of-way would be delineated through the placement of street furniture and landscaping and designed per applicable codes and accessibility guidance. The Shared Public Way would make it possible for adjoining active/retail or restaurants to utilize the street sidewalks for outdoor seating, active/retail space, and street rooms, including flexible seating, small newsstands, kiosks, outdoor dining areas, and areas for small readings or concerts with stackable seating. Vehicular access would be limited primarily to deliveries or drop-offs/pick-ups associated with businesses on the street and emergency vehicles. When games or other major events are scheduled at the ballpark, the Shared Public Way would be closed to vehicles, with the exception of emergency vehicles.

Terry A. Francois Boulevard would be a working waterfront street that would support active maritime, industrial, and production uses at the waterfront. This shared street would connect the Blue Greenway to China Basin Park, the Bay Trail, and The Embarcadero, thereby contributing to uninterrupted public Bay access along San Francisco's eastern waterfront. Terry A. Francois Boulevard would include a 24-foot-wide area for social spaces and loading zones

[39] Street rooms are intimate social spaces within the streetscapes that are characterized by their small scale and special materials.

adjacent to Blocks H, I, J, and K; a 12-foot-wide pedestrian circulation with a minimum 6-foot-wide pedestrian throughway; a 26-foot-wide shared zone; and the Blue Greenway (with a minimum width of 16 feet) adjacent to the Bay and Piers 48 and 50.

CHANNEL STREET AND CHANNEL LANE

Traffic on Channel Street currently travels in an east-west direction and terminates where Channel Street bisects Third Street, just west of Seawall Lot 337. Under the project, Channel Street would link Third Street to the Shared Public Way for bicycles and pedestrians and provide vehicle access to the Mission Rock Square parking garage. One 11-foot-wide travel lane would be provided in each direction, with sidewalks. Channel Lane, east of Mission Rock Square, would include an exit ramp from the underground garage to Terry A. Francois Boulevard. Channel Lane would also include a pedestrian connection on either side of the exit ramp from the garage for people traveling between Mission Rock Square and Channel Wharf. The Channel Lane exit ramp from the underground garage to Terry A. Francois Boulevard would be closed at all times, except during Giants games and major AT&T Park events. As such, vehicular traffic from the underground garage would not exit onto Terry A. Francois Boulevard via the Channel Lane exit ramp during weekday a.m. or p.m. peak hours under nonevent conditions. The purpose of the exit ramp is to allow nonevent parkers to exit during event periods when other access points are being used for event parkers. A portion of both Channel Street and Channel Lane would include a ramp that would descend from Third Street and Terry A. Francois Boulevard, respectively, under the Shared Public Way and Bridgeview Street for access to the underground parking garage below Mission Rock Square at the center of the project site.

THIRD STREET

As part of the proposed project, the east side of Third Street between Channel Street and Lefty O'Doul Bridge would be improved with new sidewalks, curbs, and gutters. Along this segment of Third Street, the street may be restriped to allow for two 11-foot-wide travel lanes in each direction as well as a new southbound left-turn lane at Exposition Street. A 12-foot wide sidewalk would be provided on the eastern side of the street, from China Bain Park to Mission Rock Street.

Improvements to the western side of Third Street (as described in more detail in Section 4.E, *Transportation*) are planned and would be provided as part of implementation of the Mission Bay Redevelopment Plan. Therefore, these are not included under the proposed project.

MISSION ROCK STREET

Mission Rock Street, which forms the southern boundary of the project site, was reconfigured and realigned in 2014 as part of the Mission Bay Redevelopment Plan. The reconfiguration allows for multi-modal traffic to serve Piers 48 and 50, the adjoining Mission Bay neighborhood, and the recently completed San Francisco Public Safety Building[40] to the south. West of 3rd Street, Mission Rock Street now includes two westbound lanes and one eastbound lane. East of 3rd Street, Mission Rock Street has two eastbound lanes and one westbound lane. Under the proposed project, the eastern portion of Mission Rock Street between Bridgeview Street and Terry A. Francois Boulevard would include a dedicated bicycle facility in order to connect the project site with the Blue Greenway system.

No on-street parking is provided as part of this reconfiguration, and parking would be removed from the north side of Mission Rock Street between Bridgeview Street and Terry A. Francois Boulevard to accommodate the proposed cycle track. Under the proposed project, the proposed parking garage on Block D2 would be located on the north side of Mission Rock Street and have ingress/egress that would be coordinated with the requirements of the Public Safety Building, as discussed in more detail below. The Transportation Plan that would be prepared as part of the proposed project would include a program to coordinate parking and traffic at and around the project site. In particular, the program would focus on AT&T Park events and other events in the area. During these events, many vehicles would be anticipated to enter and exit the parking garage around the same time. The Transportation Plan is discussed in further detail in Section 4.E, *Transportation*.

VEHICULAR PARKING

Approximately 3,100 parking spaces for automobiles would be included at the project site to replace approximately 2,870 existing surface parking spaces at Seawall Lot 337 and parking spaces on Pier 48, and to provide project parking. Under the proposed project, parking would continue to be provided for existing ballpark and commuter users as well as project site users. Parking would be provided in the following locations: up to 2,300 spaces in an 837,200 gsf, 10-level (100-foot) above-ground parking structure on Block D2; up to 700 spaces within the three-level, 227,000 gsf Mission Rock Square below-grade parking garage; and small amounts of parking (up to 10 spaces) below grade, at grade, or above grade within each of the other 10 development blocks, providing a total of up to 100 spaces. Parking could also be included on Pier 48 as a phased interim use but only until completion of the proposed Pier 48 rehabilitation and improvements. Vehicles would enter the Mission Rock Square Garage from either Third Street or Terry A. Francois Boulevard. Vehicles would enter the parking structure on Block D2

[40] The Public Safety Building includes San Francisco Police Department headquarters and a fire station for the San Francisco Fire Department.

from Long Bridge Street, Bridgeview Street, or Mission Rock Street. Each block would be permitted one driveway to off-street loading or parking (maximum 10 off-street spaces as mentioned above) on its Exposition or Long Bridge Street frontages. Driveway widths and locations are limited through standards specified in the Design Controls.

Project parking would be unbundled (i.e., people who live and work at the project site could choose whether or not to enter into separate, optional parking leases). All parking for onsite commercial and residential tenants would require a separate rental payment.

The precise allocation of parking spaces will be determined over time, based on demand, but parking spaces would generally be allocated to residential and office uses at approximately the following ratios:

- One space per 2,500 square feet of office uses, or
- One space per two residential units.

Unreserved parking would be generally available to project retail and restaurant customers, guests of project residents and businesses, and the public. No specific parking ratio would apply for retail and restaurant uses. All parking spaces would be offered at an additional cost to residential and commercial/office tenants. Once the ratios stated above have been met, the cost would increase. Parking rates may be increased in response to demand, including demand from games and other events at AT&T Park.

Parking in the garages would be managed and priced, through additional or increased parking rates, to discourage garage use by project tenants during the period before and during major AT&T Park events such that an aggregate of approximately 2,000 parking spaces would be available for patrons of AT&T Park during games and other large ballpark events. The proposed onsite parking is summarized in Figure 2-15 (page 2-57) and Table 2-9 below.

TABLE 2-9. PROPOSED PARKING

Location	Number of Parking Spaces
Block D2 Parking Structure	2,300
Mission Rock Square Garage	700
In-Building Parking[a]	100
Total Parking	***3,100***

Source: Seawall Lot 337 Associates, LLC., 2015

Notes:

[a.] All development blocks could include small amounts of parking (up to 10 spaces each).



Notes:

Loading zones not drawn to scale

All blocks can accommodate driveways to off-street loading bays on Exposition and Long Bridge streets, if needed.

- ADA-Accessible Passenger Loading
- Commercial Delivery Zone
- Time-Limited Commercial Delivery Zone (Accessible Loading All Other Times)
- Accessible Sidewalk
- Curbless Street
- Other Major Accessible Areas
- Driveway to Off-Street Loading
- Existing Traffic Signal
- Planned Traffic Signal
- Keep Clear Zone

Source: Seawall Lot 337 Associates, LLC, 2016.

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Figure 2-15
Loading and Commercial Delivery Zone Location and Dimensions

BLOCK D2 PARKING GARAGE

The parking garage at Block D2 would provide parking for the proposed onsite commercial, residential, and active/retail development as well as other public and transit-based parking.[41] It would also accommodate the existing demand for parking from AT&T Park patrons during ballgames and other AT&T Park events. The garage building would be 10 stories (100 feet), with an average of approximately 230 parking spaces per floor.

During normal operations, inbound and outbound access to and from the garage would be provided from both the west end and east end of Mission Rock Street (two driveways each with ingress and egress), Bridgeview Street (two driveways), and Long Bridge Street (two driveways). However, on days with Giants games or special events, the parking ingress/egress would be altered. The westernmost driveway on Mission Rock Street and the southernmost driveway on Bridgeview Street to the Block D2 garage would be closed prior to Giants games. Under post-game conditions, the westernmost driveway on Mission Rock Street and the northernmost driveway on Bridgeview Street to the Block D2 garage would be closed. The ingress/egress operations along Long Bridge Street would not change for games or events. At all times, a "keep clear" zone would be located in front of the ingress and egress area of the Public Safety Building, in accordance with SFFD requirements. Before AT&T Park games/events, Mission Rock Street would operate eastbound only and afterwards westbound only. After games traffic would be directed westbound on Mission Rock Street and turn either north or south on Third Street.

MISSION ROCK SQUARE PARKING GARAGE

Parking would also be provided in a parking garage under Mission Rock Square and the adjacent streets. This garage would be accessible at two locations for egress and ingress from a ramp. One location would be from the west, descending from Third Street toward the east, under the Shared Public Way and Mission Rock Square. The other location would be from the east, descending from Terry A. Francois Boulevard toward the west, under Bridgeview Street and Mission Rock Square. The single outbound lane to the Terry A. Francois Boulevard/Channel Lane intersection would be closed at all times, except during a Giants game or major event at AT&T Park. By restricting parking to permit holders only, attendees at Giants games or major AT&T Park events would not park in the underground garage. The parking garage would include three levels of below-grade parking for approximately 700 vehicles and would be excavated to a depth of approximately 33 feet.

[41] Transit-based parking provides parking for patrons of transit options, such as Muni and Caltrain, in the area, similar to a Park-n-Ride. On nongame days, commuters could use these parking areas.

OTHER PARKING

The parking on the other development blocks would be limited to no more than 10 spaces below grade, at grade, or above grade within the first few floors of each building. However, the location of parking would not change the building footprints, height parameters, or the total number of proposed parking spaces for the entire project site (3,100 total spaces). The up to 10 parking spaces on the other development blocks would not be used by residents, office workers, or the public. They are intended to be used for building operations (e.g., building managers, contractors, and other building/tenant service providers). These spaces also may be allocated for retailers located in that development block for their operations.

Street parking would not be available on the project site. Loading zones would be provided on Exposition Street, Long Bridge Street, and Terry A. Francois Boulevard. Loading zones are shown in Figure 2-15, on page 2-57.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

The proposed project includes a Transportation Demand Management Program (TDM Program) that provides a strategy to manage the transportation demands created by the project. Monitoring and other applicable requirements for the TDM Program are specified in Section 4.G, *Air Quality*, in Mitigation Measure M-AQ-2.3.

Key strategies in the TDM Program would include the following measures:

- Transit Strategies
  - Real-time Transit Information and Marketing Screens – Install and maintain state-of-the-art transit information displays in building lobbies
  - Transit Subsidies – Provide Clipper Card pre-loaded with $50 cash value to all residents upon move in, and require that business tenants offer employees the same
- Bicycle Strategies
  - Onsite Bike Share – Establish a high-visibility space for a Bay Area Bike Share dock
  - Bike Share Memberships – Provide annual memberships for all residents
  - Bike Event Programming – Host regular bike parties or happy hours for the bicycling community
  - Bicycle Resource Center – Establish a bicycle maintenance space near the secure bike parking area in each building
  - Bike Parking – Construct one Class I bike parking space per dwelling unit (an additional 1,325 Class I spaces above Planning Code requirements under the High Residential Assumption or 1,005 Class I spaces under the High Commercial

Assumption and an additional 304 Class II spaces above Planning Code requirements under either assumption).

- Showers and Lockers – Provide shower and clothes locker facilities for tenants and employees per City code
- Bike Valet – Provide free bike valet services for onsite events

- Personal Motorized Transport Strategies
  - Onsite Shared Scooters – Provide reserved off-street parking spaces for 20 scooters
  - Electric Scooter Memberships – Offer a first-year Scoot membership to all new residents
  - Onsite Car-share Parking Spaces – Provide as many as 50 designated car-share spaces, and negotiate an agreement with one or more local car-share vendors
  - Car-share Memberships – Offer annual memberships to all households
- Parking Strategies
  - Parking Pricing – At full buildout, price parking to keep demand below a threshold occupancy rate, and encourage site users to avoid parking during AT&T Park events
  - Real-time Parking Pricing and Availability Information – Install dynamic displays to show real-time parking price and availability information
- Building Strategies
  - In-Building Concierge Services – Encourage vertical developers to appoint an in-building concierge staff, and coordinate with site-wide transportation staff members
  - Coordinated Delivery Services – Establish site-wide partnerships with Internet delivery services companies
  - Community-Supported Agriculture (CSA) Partnerships – Coordinate with local CSAs to provide group deliveries, and explore options for hosting regular farmers markets
  - Cold and Dry Delivery Storage Space – Provide storage space near the concierge and elevators
  - Childcare Facilities and Services – Attract a provider of onsite childcare services to ensure easy access for Mission Rock residents and employees
  - Collaborative Work Space – Provide a business services room to facilitate working from home
  - Elevator Design – Create a design that easily accommodates bicycles, wheelchairs, and strollers

- Affordable Housing – Designate 40 percent of onsite units to inclusionary affordable housing in a balanced manner through the development phasing

- All-Realm Strategies
  - Signage and Wayfinding across Modes – Design and install signage and wayfinding at key points throughout the development
  - Mobile-Friendly Mission Rock Transportation Website – Create site-wide website with a dynamic and engaging section dedicated to transportation information and services, with specific portals for each user type
  - Onsite Transportation Staff – Hire and assign a dedicated professional transportation staff to providing individualized advice on transportation options
  - Improved Walking Conditions – Provide high-quality pedestrian improvements

CONSTRUCTION

PROPOSED PROJECT PHASING

The proposed project phasing, as presented in this document, is an estimate, providing the most conservative scenario. The phasing of project implementation would be subject to change due to market conditions and other unanticipated factors and could extend beyond 2023. As shown in Figure 2-16 on the following page, the current phasing plan anticipates that the project would generally be developed from west to east. Although the phasing could shift, buildout would not occur from east to west. Phasing would also be flexible because some elements of site-wide soil preparation may precede or overlap with phases.[42]

For purposes of construction phasing, the project site generally has been divided into four areas. Each area would consist of two or three development blocks and associated areas for streets and open spaces. Table 2-10, page 2-63, summarizes the currently anticipated proposed project phasing by area. As shown, some overlap in construction activities is anticipated between the four areas of the project site. Construction of Area 1 would occur from 2017 to 2020, Area 2 from 2018 to 2021, Area 3 from 2019 to 2022, and Area 4 from 2020 to 2023. Construction of each area would occur in four phases: (1) asphalt demolition and rough grading, (2) infrastructure, (3) foundations and buildings, and (4) paving and landscaping. On average, each area would be constructed over about 2.25 years.

[42] The initial phase of site soil preparation is deep dynamic compaction (DDC). DDC is a ground improvement technique that densifies soils and fills using a drop weight. DDC is used to increase bearing capacity, and decrease settlement and liquefaction potential for planned structures.



Source: Seawall Lot 337 Associates, LLC, 2015

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Figure 2-16
Proposed Project Phasing Areas

TABLE 2-10. ILLUSTRATIVE PROPOSED PROJECT PHASING[A]

Phase	Proposed Development	Years	Total Number of Work Days	Total Truck Trips
Area 1	Block A Block G Block K China Basin Park Pier 48	2017–2020	783	16,340
Area 2	Block B Block C Block D	2018–2021	783	14,880
Area 3	Block E Block F Mission Rock Square and Garage	2019–2022	783	20,165
Area 4	Block H Block I Block J Channel Wharf	2020–2023	785	8,700

Source: Seawall Lot 337 Associates, LLC., 2015

a. The illustrative proposed project phasing is for purposes of environmental review only and subject to change.

CONSTRUCTION EQUIPMENT AND STAGING

Typical construction equipment that would be used at the project site would include loaders, dump trucks, bulldozers, backhoes, scrapers, water trucks, trenchers, cranes, drills, forklifts, concrete trucks, welders, air compressors, hi-lift forklifts, pile hammers, rollers, pavers, temporary generators, and berm machines. All construction equipment, employee vehicles, and import material would be staged on the project site with just-in-time deliveries.[43] Materials would be scheduled to arrive when required in the construction sequence. All impact equipment used for project construction would be equipped with the appropriate noise control features, as required by the Noise Ordinance.

In addition, in accordance with the Noise Ordinance, project construction would not occur between the hours of 8:00 p.m. and 7:00 a.m. Activities that would result in no detectable noise at adjacent land uses, such as interior painting, would not be limited to these hours. There may

[43] Just-in-time deliveries are scheduled in a manner that does not require long-term storage of material on the jobsite.

be some unscheduled situations where construction would need to extend beyond normal hours, but any such exceptional condition would be subject to normal review, permitting and approval.

CONSTRUCTION EMPLOYMENT

The number of construction workers per day at the project site would be between 30 and 450. The maximum number of construction workers would be onsite during the foundation and building phase of construction (the third building phase). Areas 1 and 2 would require the greatest number of construction workers during this third phase (450 workers), while Area 3 would require the fewest (200 workers) during this same construction phase. Construction employees would most likely be obtained from San Francisco and the greater Bay Area workforce. Workers would take public transportation, shuttles, or carpool. Workforce parking would be accommodated in Lot A, until parking is available in the parking garage on Block D2 (Area 2).

CONSTRUCTION HAULING, SPOILS, AND DEBRIS

The number of construction-related truck trips would range from 4 to 143 per day, depending on the area and phase. Truck hauls would include materials delivery, materials removal, and soil hauling. For Areas 1 and 3, the greatest number of truck trips would occur during the foundations and buildings phase (third phase), ranging from 60 to 143 trips per day. For Areas 2 and 4, the greatest number of truck trips would occur during the demolition and grading (first) phase, ranging from 50 to 57 trips per day. For all areas, the fewest truck trips would occur during the infrastructure phase (second phase), ranging from four to 11 trips per day. As shown in Table 2-10, page 2-63, Area 1 would result in a total of 16,340 truck trips, Area 2 would result in a total of 14,880 truck trips, Area 3 would result in a total of 20,165 truck trips, and Area 4 would result in a total of 8,700 truck trips. On average, the maximum truck haul distance would be approximately 16 miles.

Where possible, soil excavated onsite would be stockpiled on the site for reuse where fill is required. However, soil import and export would be necessary. Soil would be imported in all areas during the demolition and grading (first) phase (ranging from 15,791 to 33,570 cubic yards [cy]) and during the infrastructure (second) phase (ranging from 3,024 to 4,050 cy).

The maximum excavation depth on land, for the parking area under Mission Rock Square, would be approximately 33 feet, including the bottom of the lowest-level foundation slab. Basements within other new buildings constructed under the proposed project would have lesser depths. Although pile driving would be required, the piles would be impacted into the ground and would not require excavation.

Approximately 9,870 cy of soil would also be imported during the foundation and building (third) phase in Area 3. Soil would be exported from all areas during the demolition and grading (first) phase (ranging from 10,000 to 20,000 cy), the infrastructure (second) phase

(ranging from 3,360 to 4,500 cy), and the foundation and building (third) phase (ranging from 7,650 to 103,200 cy). No soil would be imported during the paving and landscaping (fourth) phase. Approximately 23 total acres would be graded during project construction. The finished grade for the site would be achieved with use of pile-supported right-of-ways (streets, sidewalks, paseos, etc.) constructed from the existing grade. The finished grade for individual buildings would be achieved with the installation of pile-supported concrete slabs constructed from the existing grade. The finished park and open space grades would be achieved with the placement of either light-weight soil or geofoam (styrofoam blocks), which would both replace and supplement existing fill to achieve no net increase in overall soil weight.

It is anticipated that the soil off-haul location would be in Brisbane, approximately 6 miles south of the project site. The haul route from the project site would be south on Third Street to Mariposa Street, south on I-280 to U.S. Highway 101 (US 101), and along Beatty Avenue in Brisbane, to the west of US 101. A potential debris disposal location would be in South San Francisco, with the haul route starting south on Third Street, continuing to Mariposa Street and south to US 101, and exiting at Oyster Point Boulevard East. See Section 4.O, *Hazards and Hazardous Materials*, for a description of the strategies for handling soils that could contain hazardous materials.

As discussed in more detail below, the goal for overall development at the project site includes environmental measures. Leadership in Energy and Environmental Design (LEED) Gold certification will be achieved for all commercial office/retail buildings and LEED Silver certification for all residential development onsite, as outlined in the Port of San Francisco Green Building Standards Code and other City codes. The following design strategies could be implemented during proposed project construction: meet construction waste recycling requirements for parking lot demolition, recycle construction waste, specify low-emitting construction materials, specify low levels of embodied carbon materials, and specify low toxicity for all materials.

PILE DRIVING

As explained above, pile driving would be required for the Pier 48 seismic upgrade and structural rehabilitation. In addition, the buildings and streets at Seawall Lot 337 would require pile driving. For the buildings, steel H-piles, an average of 230 feet in length, would be installed with a pile driver. In total, for all of the proposed buildings on Seawall Lot 337, approximately 3,880 piles would be required. For the streets, steel H-piles measuring approximately 145 feet in length would be installed with a pile driver. Approximately 500 piles would be needed to support the streets. Steel H-piles would also be installed to support the promenade and boardwalk at China Basin Park. It is assumed that approximately 200 piles with a length of 145 feet would be required in this area. During the entire construction period, an average of 6 to 10 piles would be installed per day.

PARKING DURING PHASED BUILDOUT

During the phased buildout of the project but prior to construction of the Block D2 garage, part of Area 2, parking for AT&T Park and project tenants in Area 1 would be provided on the remaining portions of surface parking Lot A. In addition, up to 700 parking spaces would be included on Pier 48 as an interim use until completion of the proposed Pier 48 rehabilitation and improvements.

UTILITIES

ENERGY USE

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

WATER USE

The SFPUC currently owns and operates the existing potable water infrastructure that serves the project site. Potable water is currently delivered to the proposed project vicinity by a 12-inch main beneath Third Street, a 12-inch main beneath Terry A. Francois Boulevard, and a 12-inch main beneath Mission Rock Street. With proposed project development onsite, two new connections to the existing 12-inch main beneath Third Street are proposed at Exposition Street and Long Bridge Street, and a new connection to the existing 12-inch main beneath Mission Rock Street is proposed at Bridgeview Street. The existing 12-inch main beneath Terry A. Francois Boulevard would be removed and replaced with a new main, which could use 12-inch pipes, to accommodate reconstruction of Terry A. Francois Boulevard. The proposed project would require the installation of a new onsite looped low-pressure water system which could use 12-inch pipes. In addition to the proposed onsite looped domestic water system, new fire hydrants would be provided and spaced in accordance with City requirements. The project may also include the installation of an onsite system of 12-inch high-pressure water pipes to connect to the City's existing Auxiliary Water Supply System (AWSS) distribution system or an alternative solution, as coordinated with the SFPUC.

In order to meet the project's site-wide water reduction targets and LEED requirements (discussed below), the proposed project would include the following sustainable design elements: low-flow fixtures for lavatories, urinals, sinks, and showers to reduce domestic water demand by at least 30 percent; installation of required water meters and purple pipes; and treated graywater to meet 100 percent of the proposed project's flushing demands with nonpotable water. The proposed project would also include designs for irrigation water

savings, such as public and private green spaces that include native/adapted plantings and drip irrigation with 70 percent efficiency, irrigation control sensors, and hydro zones. Graywater (discussed below) or blackwater[44] collected from the buildings would be used to meet 100 percent of the proposed project's nonpotable irrigation demand. Some blackwater would be treated onsite for re-use as nonpotable water; the rest would be discharged into the combined sewer system.

Recycled water is currently delivered to the proposed project vicinity by an 8-inch line beneath Mission Rock Street between Third Street and Terry A. Francois Boulevard. Recycled water infrastructure does not currently exist within Terry A. Francois Boulevard because the City does not currently have a functioning recycled water distribution network in Mission Bay. However, in compliance with the City's recycled-water ordinances, the proposed project would include the installation of an onsite looped recycled water system, which could consist of 8-inch main lines.

To realize site-wide water savings, a graywater treatment system, which could consist of 8-inch main lines, is proposed for the project. The graywater system would collect water from sinks, showers, and laundry facilities in selected blocks and treat the water centrally before distributing the nonpotable water to all buildings for flushing and site irrigation. If a municipal recycled water supply comes online in the future, the project could continue to treat graywater and generate its own recycled water or connect to the City-supplied recycled water. In either case, the required onsite looped recycled water system would be used to distribute the recycled water.

WASTEWATER

The SFPUC would meet the future wastewater demands for the project site; however, there are currently no sanitary sewer facilities that serve the project site. To serve the proposed project, a series of 8- to 12-inch sanitary sewer mains would be installed onsite within the public street right-of-ways. The sanitary sewer mains would then discharge to the existing 21-inch sanitary sewer system beneath Third Street at two locations—a new sanitary sewer main, which could consist of 10-inch pipe, at Channel Street and a new sanitary sewer main, which could consist of 8-inch pipe, at the intersection of Third Street and the proposed Long Bridge Street. The existing 15-inch combined main beneath Terry A. Francois Boulevard would be removed and replaced with a separate sanitary sewer main, which could consist of 12-inch pipe, during reconstruction of Terry A. Francois Boulevard. This would serve the proposed development and existing Piers 48 and 50.

[44] Blackwater is a type of wastewater that is contaminated with water discharged from a toilet.

STORMWATER

Currently, wastewater and stormwater are collected separately, and most stormwater discharges directly or indirectly to San Francisco Bay. As appropriate, the project sponsor would remove existing storm drainage infrastructure within Seawall Lot 337, China Basin Park, and Terry A. Francois Boulevard. Storm drainage infrastructure would remain intact on Pier 48, which directly discharges runoff to the Bay within the Pier 48 structure. Per the San Francisco Stormwater Management Requirements and Design Guidelines (SMR) and Port SMR performance requirements, the project would design the sustainable stormwater quality control strategy in accordance with the more conservative SFPUC regulations because compliance with both the SFPUC and the Port SMR stormwater performance requirements can be achieved through implementation of similar BMPs.

To serve the proposed project, new storm drainage pipe infrastructure would be installed within the proposed new interior streets serving the proposed project. In addition, storm drain lateral connections would be installed to serve the proposed development blocks and would be sized based on the individual block demands. Compliance with stormwater quality regulations would be designed and implemented during the planning and construction phases on a block-by-block basis. For the conceptual stormwater management strategy, the proposed project would be designed to meet the San Francisco SMR. Development blocks would implement stormwater treatment measures within the blocks or convey treatment flows to the centralized treatment areas within the open space areas to meet these guidelines prior to connecting to the storm drain system.

Runoff from impervious portions of Seawall Lot 337 would be conveyed by gravity or force main for treatment in a northerly direction to rain gardens in Mission Rock Square, China Basin Park, and the Shared Public Way. Self-contained treatment would include pump stations for stormwater treatment flows and overflow from stormflows in excess of treatment flows, which would be applied at the north and south ends of the project site. Treatment of stormwater runoff for the public right-of-way north of Channel Street would occur at the source, within the street sections and plaza areas, through approximately 6,000 gsf of bio-retention and rain garden areas. The separated storm drain system would collect stormwater runoff within the public street right-of-way south of Channel Street and Mission Rock Square and pump it to approximately 14,000 gsf of bio-retention areas and rain gardens within China Basin Park.

EMERGENCY GENERATORS

The proposed project would include emergency generators to supply power to key buildings and facilities during a power outage. It is assumed that Seawall Lot 337 would include eight emergency generators, and Pier 48 would include two (for a total of 10 generators, two in each of the four areas on the building rooftops plus two on Pier 48). Based on standards established by the Bay Area Air Quality Management District, each generator would be a diesel-powered, 2,000-horsepower unit and operate an average of 50 hours per year. For purposes of this analysis, two of the emergency generators would be located in each of the four areas on building rooftops and two would be in the valley of Pier 48 (and would not be visible from outside of Pier 48).

SUSTAINABLE DESIGN

The project sponsor, the Planning Department, the Port, and other City agencies have designated the project site as a Type 1 Eco-District[45] to help meet environmental goals. A Type 1 Eco-District is characterized by a large amount of undeveloped land that is typically owned by a single property owner, enabling horizontal infrastructure development to be implemented concurrent with vertical development to maximize efficiency through district-wide infrastructure systems. The project sponsor, in conjunction with the Port and other City agencies, would develop an integrated Eco-District Plan that identifies measurable goals, standards, and performance metrics. Multiple sustainable site approaches would be considered from the outset of horizontal development to enable vertical development design proposals to exceed Port Building Code requirements.

The goal for the overall development includes LEED certification for all commercial office/retail buildings and residential development onsite, as outlined in the San Francisco Green Building Ordinance and other City codes. The project sponsor would implement a comprehensive Sustainability Strategy, which would include strategies toward achieving LEED certifications, outline the targets for carbon reductions, and explain how the infrastructure, buildings, and community would coordinate to achieve these targets consistent with the Design Controls. The project sponsor collaborated with the City through the SFPUC, the Department of the Environment, the Planning Department, and the Port to develop the Sustainability Strategy.

[45] The Planning Department has identified four types of eco-districts within the city, each defined by the community that exists within the district.

F. PROPOSED CHANGES TO LAND USE AND ZONING

Seawall Lot 337 and Parcel P20 are currently within the MB-OS Use District; Pier 48 is within the M-2 Use District. The entire project site is also within the Mission Rock Height and Bulk District. This section addresses proposed changes to existing land use, zoning, and other San Francisco plans and policies.

LOCAL PLANS AND POLICIES

PLANNING CODE TEXT AND ZONING MAP AMENDMENTS

Section 291 was added to the Planning Code with the passage of Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative, on November 3, 2015, which established a new Mission Rock Height and Bulk District and modified Zoning Map Sheet HT08 to identify the new district's boundaries. Section 291 establishes height and bulk limits for the Mission Rock Height and Bulk District and requires the adoption of Design Controls for the district to guide the design of improvements within established height limits. The Design Controls would be consistent with the height and bulk restrictions set forth in Section 291 for the Mission Rock Height and Bulk District and satisfy the requirement to adopt Design Controls for the district.

Mission Rock Design Documents. Five documents have been developed to guide development design for the Mission Rock Project. These documents are the Vision and Design Intent, which provides the aspirations for design of the entire project; the Design Controls, which will guide development of the open spaces, streets, and buildings; the Sustainability Strategy, which identifies performance targets and describes how design of the infrastructure, buildings, and community will achieve these standards; the Infrastructure Plan, which details how design of streets, utilities, and services will be coordinated, and the Transportation Plan, which describes how project design will support the mobility choices of all users, with a special emphasis on safe and comfortable conditions for pedestrians and cyclists.

Vision and Design Intent. The Vision and Design Intent document (Vision Document) is an overarching planning document prepared for Mission Rock that contains the broader urban design vision that guides the Design Controls, Sustainability Strategy, Infrastructure Plan and Transportation Plan for Mission Rock. The Vision Document also contains a detailed discussion of the planning process for Mission Rock, with chapters that include Vision, Context, Design Intent, and Framework, as summarized below.

Chapter 1, Vision. This chapter includes an overarching Vision Statement and Planning Principles and emphasizes plan directions for the project site, including taking advantage of the site's waterfront location; establishing public spaces; developing China Basin Park as a regional facility, coupled with Pier 48; improving the character of the area; connecting Terry A. Francois

Boulevard to the Bay Trail's Blue Greenway, China Basin Park, and The Embarcadero; and ensuring that Mission Rock becomes a place where people live and work in a mixed-use urban neighborhood that creates significant revenue to support parks.

Chapter 2, Context. The detailed urban planning context for the Mission Rock project includes Mission Rock Over the Years, Port of San Francisco Planning and Development, and Surrounding Context (including land uses, transit, retail, and open space).

Chapter 3, Design Intent. Outlined in this chapter is the extensive seven-year public process that guided design of Mission Rock. Some of the important considerations identified were to prioritize waterfront open space, include sunny and welcoming open spaces, consider views from surrounding neighborhoods to and through the site, and ensure an appropriate scale and mix of development that supports a vibrant public life and a neighborhood feel.

Chapter 4, Frameworks. This chapter breaks the project site out by its constituent frameworks of mix of uses, open space, street network, urban form, multimodal mobility, and sustainability and resilience approaches, illustrating and describing how design principles and intent will be translated into a neighborhood of innovation, leadership, and community. These frameworks lay out the key planning principles that in turn are detailed in the Design Controls.

Special Use District. The project sponsor would seek approval to rezone the project site through a Special Use District (SUD) that would be codified in a Planning Code text amendment and identified in the Zoning Map to reflect the proposed boundaries of the SUD. Approval of the proposed SUD would be consistent with the previous amendments to the Planning Code and Zoning Map, pursuant to Proposition D, and reference the required Design Controls.

As discussed above and illustrated in Figure 2-4, on page 2-21, flexible zoning would allow for a mixed-use development that would respond to future market conditions. The proposed new zoning would permit the following, all of which would be above the lower floors of active/retail/production:

- Blocks A, D1, F, and K would be required to be primary residential use.
- Blocks B, C, E, and G would be required to be primary commercial use.
- Blocks H, I, and J would be permitted for either primary commercial or primary residential uses.
- Block D2 would be zoned to allow structured public parking up to 100 feet above grade.
- Permitted uses on Pier 48 would include industrial/production, general office and storage, active/retail, restaurant, tour, exhibition, event, and maritime uses.
- Assembly uses and other special events would be permitted at China Basin Park (for approximately 5,000 people) and Mission Rock Square (for approximately 2,000 people).

- The SUD would include a variety of changes to the Planning Code, as required, to accommodate project uses, building form, and other development controls (e.g., to reflect the form-based Design Controls in lieu of other controls, such as floor area ratio [FAR], residential density, rear yard and dwelling unit exposure, parking and loading program, open space and streetscape plans). It would also provide a phased review process for vertical and horizontal development of the project.

REGIONAL AND STATE PLANS AND POLICIES

The project sponsor and the Port will apply jointly to secure State and regional approvals, as necessary. Several existing plans, described below, would require amendments to allow proposed project implementation.

SAN FRANCISCO BAY PLAN

BCDC's San Francisco Bay Plan (Bay Plan) implements the 1965 McAteer-Petris Act, which charges BCDC with planning for the long-term use of the Bay and regulating development in and around the Bay. The Bay Plan, completed in 1969, includes policies on the use of the Bay, ranging from ports and public access to design and transportation. The Bay Plan also contains maps of the entire Bay, which designate shoreline areas that should be reserved for water-related purposes, such as ports, industry, public recreation, airports, and wildlife refuges.

BCDC and the MTC cooperatively adopted the San Francisco Bay Area Seaport Plan (Seaport Plan) in 1996. The Seaport Plan, which has been incorporated into the Bay Plan, provides long-term planning for port uses and uses within the Bay. It designates Pier 48 and about 6 acres on the eastern edge of Seawall Lot 337 as port priority use areas. Under this designation, Pier 48 is to be reserved as a future site for neo-bulk cargo shipping, and the eastern 6 acres of Seawall Lot 337 are to remain available as a backland area for potential cargo operations.

BCDC's San Francisco Waterfront Special Area Plan, an element of the Bay Plan, incorporates the Seaport Plan's port priority use areas. Under AB 2797, Pier 48 and the eastern 6 acres of Seawall Lot 337 were deemed free of the "port priority" designation as of January 1, 2017.

The Port began a community planning process for development of Seawall Lot 337 and Pier 48 in 2006 and identified the need to seek removal of the port priority designation to permit mixed-uses at the site.

PORT WATERFRONT LAND USE PLAN

The Port Waterfront Land Use Plan (WLUP) was initially adopted by the Port Commission in 1997. It defines acceptable uses and policies and provides land use information applicable to all properties under the Port Commission's jurisdiction. The WLUP has enabled the Port Commission and the community to jointly define locations for new public/private partnership

projects and coordinate with major public open space, maritime, and historic preservation improvements along the waterfront.[46] Pursuant to the WLUP, the Port conducted a site development process for Seawall Lot 337 to develop parameters for the request for proposals that led to the proposed project and SUD. The WLUP incorporates the BCDC port priority use designations over portions of the project site. For the proposed project, WLUP amendments would include removing the port priority use designations from the project site and incorporating land uses consistent with the SUD.

Separate from the WLUP amendment process for the proposed project, a public process to update the WLUP is now currently underway. Three waterfront working group subcommittees have been established and are each holding multiple public meetings beginning in October 2016 and anticipated to continue through February 2017 to develop recommendations for the WLUP update. The WLUP update does not include changes to the proposed project, in recognition of the public planning process that developed objectives for development of Seawall Lot 337, San Francisco voter approval of Proposition D, the public comment process in the EIR, and the Mission Rock project approvals process.

G. PROJECT APPROVALS

The proposed project would be subject to review and approval by agencies with appropriate jurisdiction, including various City and other local agencies, state agencies, and federal agencies. These agencies are expected to use the EIR in their decision-making for project approvals, including those listed below.

LOCAL AGENCIES

CITY AND COUNTY OF SAN FRANCISCO

SAN FRANCISCO PLANNING COMMISSION

- Certify EIR.
- Recommend to Board of Supervisors Planning Code amendments to change the land use classifications for the project site and create an SUD, including design review procedures and related Planning Code amendments.
- Recommend to Board of Supervisors approval of a Development Agreement with the project sponsor.

[46] Port of San Francisco. 2013. *Waterfront Land Use Plan*. Available: http://www.sf-port.org/index.aspx?page=199. Accessed June 13, 2013.

- Make general plan consistency findings and priority policy determinations pursuant to Planning Code Section 101.1.
- Approve the Design Controls.

SAN FRANCISCO PORT COMMISSION

- Consent to Planning Code amendments and Development Agreement between City and project sponsor.
- Approve, subject to Board of Supervisors approval under Charter section 9.118, the Disposition and Development Agreement (DDA) between the Port and the project sponsor; the Port's master lease of Seawall Lot 337 with the project sponsor; a Port lease with the Pier 48 tenant; and the form of ground lease with building developers at Seawall Lot 337.
- Approve the Infrastructure Plan, and various other transactional documents.
- Approve the Design Controls and conforming amendments to the WLUP.
- Approve, subject to Board of Supervisors approval, form infrastructure and community facilities financing districts over the project site, an infrastructure financing plan and rates and methods of apportionment specifying the authorized uses of tax increment and special taxes allocate to the districts, and request that the Board of Supervisors appoint the Port as the agent of the financing districts for all purposes authorized under law and the district formation documents.
- Approve, subject to Board of Supervisors approval under Charter section B7.320, a memorandum of understanding among the Port, the Assessor, the Treasurer-Tax Collector, and the Controller regarding property assessments, special tax levies, and allocation of special taxes and property tax increment to the financing districts for the life of the financing districts.
- Approve, subject to Board of Supervisors approval under Charter section B7.320, a memorandum of understanding for interagency cooperation between the Port and the City (ICA) with respect to construction, inspection, and acquisition of public facilities that the project sponsor builds at the project site.

SAN FRANCISCO BOARD OF SUPERVISORS

- Approve Planning Code amendments, including text and Zoning Map amendments, to change the land use classifications for the project site and create an SUD.
- Approve under Charter section 9.118 the DDA between the Port and the project sponsor, the Port's master lease of Seawall Lot 337 with the project sponsor; the Port's lease with the Pier 48 tenant; and the form of ground lease between the Port and building developers at Seawall Lot 337.

- Approve an amendment to the Mission Bay South Redevelopment Plan to revise the project area boundaries.
- Approve a Development Agreement between the City and the project sponsor.
- Adopt ordinances forming infrastructure and community facility financing districts and approve an infrastructure financing plan and rates and methods of apportionment specifying the authorized uses of special taxes and property tax increment allocated to the districts.
- Approve under Charter section B7.320 a memorandum of understanding among the Port, the Assessor, the Treasurer-Tax Collector, and the Controller regarding property assessments, special tax levies, and allocation of special taxes and property tax increment to the Port for the life of the financing districts and the ICA.
- Approve ancillary legislation for the project, if applicable.

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

- Consent to the ICA.

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

- Approve a site mitigation plan under Health Code Article 22A (Maher Ordinance).
- Approve a monitoring and reporting plan for use of an alternative water supply (i.e., reuse of treated water for flushing or other nonpotable uses).

SAN FRANCISCO PUBLIC WORKS

- Approve tentative subdivision maps.

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY BOARD OF DIRECTORS

- Approve new street design, including bicycle path improvements and street lane configurations.
- Consent to the ICA.

OTHER LOCAL AGENCIES

COMMISSION ON COMMUNITY INVESTMENT AND INFRASTRUCTURE

- Approve an amendment to the Mission Bay South Redevelopment Plan changing redevelopment plan area boundary.
- Approve amendment of the Mission Bay South Owner Participation Agreement to remove obligations with respect to Parcel P20.

STATE AGENCIES

STATE LANDS COMMISSION

- Approve the procedures for establishing the fair-market value of the development blocks, the form of ground lease, and the Port's use of ground lease proceeds to pay for Seawall Lot 337 infrastructure costs in accordance with Section 4.5 of SB 815, as amended by AB 2797.

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

- Approve amendments to the San Francisco Waterfront Special Area Plan to revise maps, delete port priority use area on portion of Seawall Lot 337.
- Approve major permit to authorize construction within the 100-foot shoreline band.

SAN FRANCISCO REGIONAL WATER QUALITY CONTROL BOARD

- Approve Clean Water Act Section 401 Water Quality Certification for Pier 48 rehabilitation work and, for Variant 1 only, for infrastructure for and discharge from Bay water heating/cooling system.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

- Approve permit for Pier 48 rehabilitation work under California Endangered Species Act.

FEDERAL AGENCIES

U.S. ARMY CORPS OF ENGINEERS (USACE)

- Approve Clean Water Act Section 404 permit and Section 10 permit under the 1899 Rivers and Harbors Act to authorize Pier 48 rehabilitation work.

NATIONAL MARINE FISHERIES SERVICE

- Consult under Section 7 Endangered Species Act and Essential Fish Habitat Act, in connection with USACE permitting.
- Authorize incidental take under Marine Mammal Protection Act for Pier 48 rehabilitation work, if applicable.

3. PLANS AND POLICIES

This chapter provides a summary of relevant City and County of San Francisco (City) and regional plans and policies that are applicable to the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project), focusing on the proposed project's potential inconsistencies with those plans and policies. Inconsistency with a policy, plan, or regulation does not necessarily result in a significant impact pursuant to the California Environmental Quality Act (CEQA). To result in an impact under CEQA, the inconsistency must be related to a direct or indirect physical impact on the environment and result in a significant, adverse impact (as determined by application of the significance criteria in this Draft Environmental Impact Report [Draft EIR] for the affected resource). The potential physical impacts on the environment related to such conflicts are discussed in Chapter 4, *Environmental Setting and Impacts*.

Relevant City plans and policies discussed in this chapter include the San Francisco General Plan (General Plan) and the Port of San Francisco (Port) Waterfront Land Use Plan (WLUP), as well as their relevant elements, the San Francisco Planning Code (Planning Code). The chapter also discusses regional plans and policies that are applicable to the proposed project, including the Bay Conservation and Development Commission (BCDC) San Francisco Bay Plan (Bay Plan), the San Francisco Waterfront Special Area Plan (an element of the Bay Plan), and the BCDC and Metropolitan Transportation Commission (MTC) San Francisco Bay Area Seaport Plan (Seaport Plan). Other applicable local planning documents, including the Bicycle Plan, Transit First Policy, Better Streets Plan, Sustainability Plan, Accountable Planning Initiative, and the Mission Bay South Redevelopment Plan, are also described for context.

As described in Chapter 2, *Project Description*, this Draft EIR analyzes two different land use assumptions, High Commercial and High Residential, to capture the full range of possible land uses that could be developed on the project site at Seawall Lot 337. The High Commercial Assumption and High Residential Assumption are largely similar in terms of the proposed overall square footage, building configuration, and other improvements; they would differ primarily in the mix of residential and office space provided and the height of proposed structures on three blocks (Blocks, H, I, and J). Because the intensity and mix of land uses is largely consistent between the two land use assumptions, the plan and policy consistency analysis below applies to both land use assumptions. The determination of a project's consistency with an applicable local general plan or policy or regional plan is ultimately made independently of the environmental review process by the project decision-makers when they decide whether to approve or disapprove a project. The analysis in this chapter is intended to provide decision-makers with a synopsis of relevant planning and policy considerations, including a preliminary conclusion about the proposed project's consistency with relevant plans and policies. These preliminary conclusions are intended to supplement the decision-makers' own understanding of the various and often competing policy considerations.

A. SAN FRANCISCO PLANS AND POLICIES

SAN FRANCISCO GENERAL PLAN

The General Plan, as adopted by the Planning Commission and the Board of Supervisors, contains the comprehensive, long-term land use policy for San Francisco. The General Plan serves as a guide to protect, preserve, and enhance the desirable quality and unique character of the city; improve the city as a place for living, commerce, and industry; coordinate the city's land use and circulation patterns for efficient functioning and the convenience and well being of its residents, workers, and visitors; and coordinate the city's growth and development with adjoining jurisdictions. The General Plan contains the following elements: Housing, Commerce and Industry, Recreation and Open Space, Community Facilities, Transportation, Community Safety, Environmental Protection, Urban Design, and Arts. In addition, the General Plan includes a Land Use Index that cross references the policies related to land use. The General Plan designates several planning areas and subareas; the project site does not fall within the boundaries of any of these area plans or subarea plans. The most relevant General Plan elements to a general consistency analysis for this project are the Urban Design Element, the Housing Element, the Commerce and Industry Element, the Environmental Protection Element, and the Transportation Element, described below.

The City decision-makers will evaluate the proposed project for conformance with the objectives and policies of the General Plan and consider potential inconsistencies as part of the decision-making process.

URBAN DESIGN ELEMENT

The Urban Design Element of the General Plan, which guides the physical character and order of the city, is concerned both with development and preservation. The Urban Design Element aims to enhance and conserve the city's positive attributes and improve the living environment, including the protection of public views of open space and water bodies as well as the protection and enhancement of the aesthetic character of San Francisco. The Urban Design Element contains the following objectives and policies that are applicable to the proposed project:

- Objective 1: Emphasis of the characteristic pattern that gives the city and its neighborhoods an image, sense of purpose, and means of orientation.
- Policy 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.
- Policy 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

- Policy 1.5: Emphasize the special nature of each district through distinctive landscaping and other features.
- Policy 1.8: Increase the visibility of major destination areas and other points for orientation.
- Objective 2: Conservation of resources that provide a sense of nature, continuity with the past, and freedom from overcrowding.
- Policy 2.3: Avoid encroachments on San Francisco Bay that would be inconsistent with the Bay Plan or the needs of the city's residents.
- Policy 2.4: Preserve notable landmarks and areas of historic, architectural, or aesthetic value and promote the preservation of other buildings and features that provide continuity with past development.
- Policy 2.5: Use care in remodeling of older buildings in order to enhance rather than weaken the original character of such buildings.
- Policy 2.6: Respect the character of older development nearby in the design of new buildings.
- Policy 2.7: Recognize and protect outstanding and unique areas that contribute in an extraordinary degree to San Francisco's visual form and character.
- Objective 3. Moderate major new development to complement the city pattern, the resources to be conserved, and the neighborhood environment.
- Policy 3.1: Promote harmony in the visual relationships and transitions between new and older buildings.
- Policy 3.2: Avoid extreme contrasts in color, shape, and other characteristics that will cause new buildings to stand out in excess of their public importance.
- Policy 3.3: Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations.
- Policy 3.4. Promote building forms that will respect and improve the integrity of open spaces and other public areas.
- Policy 3.5. Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.
- Policy 3.6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction.
- Policy 3.7. Recognize the special urban design problems posed in development of large properties.

- Policy 3.8. Discourage accumulation and development of large properties, unless such development is carefully designed with respect to its impact upon the surrounding area and upon the city.
- Objective 4. Improve the neighborhood environment to increase personal safety, comfort, pride, and opportunity.
- Policy 4.12: Install, promote, and maintain landscaping in public and private areas.
- Policy 4.13: Improve pedestrian areas by providing human scale and interest.
- Policy 4.14: Remove and obscure distracting and cluttering elements.
- Policy 4.15: Protect the livability and character of residential properties from the intrusion of incompatible new buildings.

Maximum height and bulk restrictions for development in the city are set forth in the revised Map 4 (Urban Design Guidelines for Height of Buildings) and revised Map 5 (Urban Design Guidelines for Bulk of Buildings) of the Urban Design Element, respectively. As discussed in Chapter 2, *Project Description*, Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative, which was approved by San Francisco voters on November 3, 2015, amended the height and bulk restrictions for the project site by establishing the Mission Rock Height and Bulk District (see Figure 4.A-2 in Section 4.A, *Land Use and Land Use Planning*). As discussed below, adoption of a Special Use District (SUD) and Mission Rock Design Controls (Design Controls) for the proposed project would guide physical development on the project site, be applicable to all new buildings within the project site, and be consistent with the height and bulk restrictions for the Mission Rock Height and Bulk District. The General Plan defers to the Mission Rock Height and Bulk District and the Design Controls for the height limits that apply throughout the project site. The adoption of the Design Controls would ultimately be considered by decision-makers. The proposed Design Controls and SUD would generally be consistent with the above-outlined objectives and policies because the project has been designed to complement the city and neighborhood, include 8 acres of open space, and provide employment and open space opportunities for the area. The proposed building heights would be consistent with the Urban Design Element Policy 3.5 requirement (i.e., "heights of buildings should taper down to the shoreline of the Bay and ocean, following the characteristic pattern and preserving topography and views). The buildings closest to San Francisco Bay (Bay) on the east side of the proposed project would be shorter (ranging from 90 to 120 feet) than the buildings in the interior or along the west side of the project site (ranging from 90 to 240 feet), which are farther away from the Bay. Therefore, no amendments to the General Plan are contemplated or would be required. The proposed project would not conflict with the Urban Design Element. This is further explored in Section 4.B, *Aesthetics,* which concludes that the project would not degrade the existing visual character of the site or surroundings.

HOUSING ELEMENT

The 2014 Housing Element seeks to ensure adequate housing for current and future San Franciscans through objectives and policies that address the city's growing housing demand, focusing on strategies that can be accomplished with the city's limited land supply. The Housing Element contains the following relevant objectives, which are applicable to the proposed project:

- Objective 1. Identify and make available for development adequate sites to meet the city's housing needs, especially permanently affordable housing.
- Objective 4: Foster a housing stock that meets the needs of all residents across lifecycles.
- Objective 5: Ensure that all residents have equal access to available units.
- Objective 7: Secure funding and resources for permanently affordable housing, including innovative programs that are not solely reliant on traditional mechanisms of capital.
- Objective 8: Build public and private sector capacity to support, facilitate, provide, and maintain affordable housing.
- Objective 12: Balance housing growth with adequate infrastructure that serves the city's growing population.
- Objective 13: Prioritize sustainable development in planning for and constructing new housing.

The proposed project would include approximately 1,000 to 1,600 new onsite housing units, with 40 percent of the units designated as affordable. Therefore, the proposed project, as further discussed in Section 4.C, *Population and Housing*, would be consistent with this objective.

COMMERCE AND INDUSTRY ELEMENT

The Commerce and Industry Element contains objectives and policies concerning the broad range of economic activities, facilities, and support systems that constitute San Francisco's employment and service base. The Commerce and Industry Element contains the following relevant objectives and policies, which are applicable to the proposed project:

- Policy 1.1. Encourage development that provides substantial net benefits and minimizes undesirable consequences. Discourage development that has substantial undesirable consequences that cannot be mitigated.
- Policy 1.3. Locate commercial and industrial activities according to a generalized commercial and industrial land use plan.
- Objective 3. Provide expanded employment opportunities for city residents, particularly the unemployed and economically disadvantaged.

- Objective 5. Realize San Francisco's full maritime potential.
- Policy 5.4. Avoid actions that may serve to displace desired existing maritime uses.
- Policy 5.6. Foster the relation of maritime activity to other segments of San Francisco economy.

Development on Seawall Lot 337 would consist of approximately 972,000 to 1.4 million gross square feet (gsf) of commercial uses and approximately 241,000 to 245,000 gsf of active/retail uses. As discussed in Section 4.C, *Population and Housing*, it is estimated that the proposed project would employ approximately 4,510 to 6,050 people, depending on the land use assumption implemented. The proposed project would also rehabilitate Pier 48 to accommodate a range of uses, including industrial, associated general office and storage, active/retail, restaurant, tour and exhibition space, and event-related uses as well as public access with the potential for expanded maritime uses on the aprons and along Channel Wharf. The proposed project would be generally consistent with the relevant policies and objectives discussed above and would not displace existing maritime uses. The proposed project would not conflict with relevant objectives and policies in the Commerce and Industry Element. This is discussed in Section 4.A, *Land Use and Land Use Planning*, which concludes that the project would not conflict with a land use plan.

ENVIRONMENTAL PROTECTION ELEMENT

The Environmental Protection Element contains objectives and policies concerning the impacts of urbanization on the natural environment. The Environmental Protection Element contains the following relevant objectives and policies, which are applicable to the proposed project:

- Policy 9.2: Impose traffic restrictions to reduce transportation noise. Transportation noise levels vary according to the predominance of vehicle type, traffic volume, and traffic speed. Curtailing any of these variables ordinarily produces a drop in noise level. In addition to setting the speed limit, the City has the authority to restrict traffic on city streets, and it has done so on a number of streets. In addition, certain movement restraints can be applied to slow down traffic or divert it to other streets. These measures should be employed where appropriate to reduce noise.
- Policy 9.6: Discourage changes in streets which will result in greater traffic noise in noise-sensitive areas. Widening streets for additional traffic lanes or converting streets to one-way direction can induce higher traffic volume and faster speeds. Other techniques such as tow-away lanes and traffic light synchronization also facilitate heavier traffic flows. Such changes should not be undertaken on residential streets if they will produce an excessive rise in the noise level of those streets.

- Objective 10: Minimize the impact of noise on affected areas. The process of blocking excessive noise from our ears could involve extensive capital investment if undertaken on a systematic, citywide scale. Selective efforts, however, especially for new construction, are both desirable and justified.
- Policy 10.1: Promote site planning, building orientation and design, and interior layout that will lessen noise intrusion. Because sound levels drop as distance from the source increases, building setbacks can play an important role in reducing noise for the building occupants. (Of course, if provision of the setback eliminates livable rear yard space, the value of the setback must be weighed against the loss of the rear yard.) Buildings sited with their narrower dimensions facing the noise source and sited to shield or be shielded by other buildings also help reduce noise intrusion. Although walls with no windows or small windows cut down on noise from exterior sources, in most cases it would not be feasible or desirable to eliminate wall openings. However, interior layout can achieve similar results by locating rooms whose use require more quiet, such as bedrooms, away from the street noise. In its role of reviewing project plans and informally offering professional advice on site development, the Department of City Planning can suggest ways to help protect the occupants from outside noise, consistent with the nature of the project and size and shape of the building site.
- Policy 10.2: Promote the incorporation of noise insulation materials in new construction. State-imposed noise insulation standards apply to all new residential structures except detached single-family dwellings. Protection against exterior noise and noise within a building is also important in many nonresidential structures. Builders should be encouraged to take into account prevailing noise levels and to include noise insulation materials as needed to provide adequate insulation.
- Policy 10.3: Construct physical barriers to reduce noise transmission from heavy traffic carriers. If designed properly, physical barriers such as walls and berms along transportation routes can in some instances effectively cut down on the noise that reaches the areas beyond. There are opportunities for a certain amount of barrier construction, especially along limited access thoroughfares and transit rights-of-way (such as BART), but it is unlikely that such barriers can be erected along existing arterial streets in the city. Barriers are least effective for those hillside areas above the noise source. Where feasible, appropriate noise barriers should be constructed.
- Objective 11: Promote land uses that are compatible with various transportation noise levels. Because transportation noise is going to remain a problem for many years to come, attention must be given to the activities close to the noise. In general, the most noise-sensitive activities or land uses should ideally be the farthest removed from the noisy transportation facilities. Conversely, those activities that are not seriously affected by high outside noise levels can be located near these facilities.

Development of the proposed project would be generally consistent with these objectives and policies. The project would lead to an increase in traffic in the vicinity of the project site, as detailed in Section 4.E, *Transportation*. Project-added traffic would result in a substantial permanent increase in noise along three segments: Fourth Street from King Street to Fourth Street Bridge, Mission Rock Street from Terry A. Francois Boulevard to Third Street, and Mission Rock Street from Third Street to Fourth Street. Although it is likely that the residential developments located along segments where a project-related substantial permanent increase in traffic noise may occur would not experience unacceptable interior noise levels, the proposed project's traffic would still result in a substantial permanent increase in ambient noise levels along the three segments. Although mitigation in the form of sound walls were considered to reduce the project's traffic noise impacts, it was determined that this mitigation was infeasible in this dense urban area, with residential buildings located close to roadways. Mitigation Measure M-AQ-2.3 in Section 4.G, *Air Quality*, requires preparation of a transportation demand management plan with a goal of reducing one-way vehicle trips by 20 percent. This mitigation measure could reduce the amount of traffic on roadway segments that experience a significant traffic noise increase.

In addition, implementation of the proposed project would introduce new noise-sensitive land uses (residential and commercial) to an area where future noise levels may exceed levels in the Land Use Compatibility Chart of the General Plan. M-NOI-2.3 (Design of Future Noise-Sensitive Uses) requires that noise attenuation measures be incorporated into new units as necessary to ensure that interior noise levels would be maintained at acceptable levels, even with future traffic noise increases. This is further discussed in Section 4.F, *Noise*.

TRANSPORTATION ELEMENT

The Transportation Element contains objectives and policies concerning the local and regional transportation system, including congestion management, vehicle circulation, transit, pedestrians, bicycles, citywide parking, and goods movement. The Transportation Element contains the following relevant objectives and policies, which are applicable to the proposed project:

- Objective 2: Use the transportation system as a means for guiding development and improving the environment.
- Policy 2.1: Use rapid transit and other transportation improvements in the city and region as the catalyst for desirable development and coordinate new facilities with public and private development.
- Policy 2.4: Organize the transportation system to reinforce community identity, improve linkages among interrelated activities, and provide focus for community activities.

- Policy 2.5: Provide incentives for transit, carpools, vanpools, walking, and bicycling and reduce the need for new or expanded automobile and automobile parking facilities.
- Objective 8: Maintain and enhance regional pedestrian, hiking, and biking access to the coast, the Bay, and ridge trails.
- Policy 8.1: Ensure that the Coast Trail, Bay Trail, and Ridge Trail remain uninterrupted.
- Objective 11: Establish public transit as the primary mode of transportation in San Francisco and as a means through which to guide future development and improve regional mobility and air quality.
- Policy 11.3: Encourage development that efficiently coordinates land use with transit service, requiring that developers address transit concerns as well as mitigate traffic problems.
- Objective 14: Develop and implement a plan for operational changes and land use policies that will maintain mobility and safety, despite a rise in travel demand that could otherwise result in system capacity deficiencies.
- Policy 14.2: Ensure that traffic signals are timed and phased to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multimodal transportation system.
- Policy 14.3: Improve transit operations by implementing strategies that facilitate and prioritize transit vehicle movement and loading.
- Policy 14.4: Reduce congestion by encouraging alternatives to the single-occupancy automobile through the reservation of rights-of-way and enhancement of other facilities dedicated to multiple modes of transportation.
- Policy 14.7: Encourage the use of transit and alternative modes of travel to the private automobile through the positioning of building entrances and convenient support facilities to prioritize access from these modes.
- Objective 16: Develop and implement programs that will efficiently manage the supply of parking at employment centers throughout the city so as to discourage single-occupant ridership and encourage ridesharing, transit, and other alternatives to the single-occupant automobile.
- Policy 16.5: Reduce parking demand through limiting the absolute number of spaces and prioritizing the spaces for short-term and ride-share uses.
- Policy 16.6: Encourage alternatives to the private automobile by locating public transit access and ride-share vehicle and bicycle parking at close-in and convenient locations onsite and parking facilities for single-occupant vehicles more remotely.
- Objective 18: Establish a street hierarchy system in which the function and design of each street are consistent with the character and use of the adjacent land.

- Policy 18.2: Design streets for a level of traffic that serves, but will not cause a detrimental impact on adjacent land uses or eliminate the efficient and safe movement of, transit vehicles and bicycles.
- Policy 18.5: Mitigate and reduce impacts of automobile traffic in and around parks and along shoreline recreation areas.
- Objective 23: Improve the city's pedestrian circulation system to provide for efficient, pleasant, and safe movement.
- Policy 23.2: Widen sidewalks where intensive commercial, recreational, or institutional activity is present and where residential densities are high.
- Policy 23.3: Maintain a strong presumption against reducing sidewalk widths, eliminating crosswalks, and forcing indirect crossings to accommodate automobile traffic.
- Policy 23.6: Ensure convenient and safe pedestrian crossings by minimizing the distance pedestrians must walk to cross a street.
- Objective 24: Improve the ambiance of the pedestrian environment.
- Objective 28: Provide secure and convenient parking facilities for bicycles.
- Policy 28.1: Provide secure bicycle parking in new governmental, commercial, and residential developments.
- Policy 28.3: Provide parking facilities that are safe, secure, and convenient.
- Objective 30: Ensure that the provision of new or enlarged parking facilities does not adversely affect the livability and desirability of the city and its various neighborhoods.
- Policy 30.1: Ensure that new or enlarged parking facilities meet need, locational, and design criteria.
- Policy 30.5: In any large development, allocate a portion of the provided off-street parking spaces for compact automobiles, vanpools, bicycles, and motorcycles commensurate with standards that are, at a minimum, representative of their proportion of the city's vehicle population.
- Policy 30.8: Consider lowering the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.
- Objective 34: Relate the amount of parking in residential areas and neighborhood commercial districts to the capacity of the city's street system and land use patterns.
- Policy 34.1: Regulate off-street parking in new housing so as to guarantee needed spaces without requiring excesses and encourage low automobile ownership in neighborhoods that are well served by transit and convenient to neighborhood shopping.

- Policy 34.3: Permit minimal or reduced off-street parking for new buildings in residential and commercial areas adjacent to transit centers and along transit preferential streets.

Development of the proposed project would be generally consistent with these objectives and policies. The project site would be accessible by all modes of transportation from Third Street, Mission Rock Street, and the reconfigured Terry A. Francois Boulevard. The proposed street network would connect to surrounding Mission Bay streets and introduce additional streets to further break the blocks into walkable distances. The streets would be part of the public realm, designed to emphasize varied and safe bicycle and pedestrian access, and integrated with active ground-floor uses across the project site.

Section 4.E, *Transportation and Circulation*, discusses how the project street design and bicycle facilities would prioritize pedestrian access over vehicular circulation and complement the ground-floor activities of the surrounding buildings. Nevertheless, implementation of the proposed project could have minor conflicts with the Transportation Element by providing parking garages that could cause delays for transit from long queues. Additionally, bicycle safety and accessibility would be affected at Pier 48, delays for transit would result from the project-related queuing, and hazardous pedestrian conditions would result at the intersection of Fourth and Mission Rock Streets. However, these potential impacts would be partially reduced through implementation of mitigation measures, thereby reducing the environmental impact and avoiding a conflict with the Transportation Element. See Section 4.E, *Transportation and Circulation*, for a more detailed discussion of potential impacts on transit, pedestrians, and bicycles as well as a discussion of mitigation measures.

PORT OF SAN FRANCISCO WATERFRONT LAND USE PLAN

The Port WLUP applies goals and policies to guide development and revitalization of the city's 7.5-mile-long waterfront area within the jurisdiction of the San Francisco Port Commission. Adopted in 1997, and since amended, the WLUP establishes a framework for determining acceptable uses for the waterfront, retaining and expanding maritime and other trust-consistent uses on Port land, and providing revenue to rehabilitate the Port's historic piers and wharves and build new public improvements to increase public access. The proposed project would be in the South Beach/China Basin Waterfront Subarea, which extends from Pier 22½ on the north to Mariposa Street on the south. The WLUP contains the following objectives for the South Beach/China Basin Waterfront Subarea:

- Preserve and rationalize existing industrial maritime activities in the area.
- Preserve and improve existing maritime uses that provide focal points for public enjoyment of commercial and recreation-oriented maritime activities.

- Promote activities and public access to make the waterfront inviting and safe and improve the living environment of the new and emerging Rincon Hill, South Beach, and Mission Bay neighborhoods.
- Take advantage of proximity to downtown San Francisco by providing attractions for the general public while respecting the needs of adjacent residents.
- Create an integrated series of public access improvements that extend a shoreline PortWalk through the area and provide a unifying pedestrian connection between South Beach and Mission Bay at China Basin Channel.

The proposed project, which would include commercial, residential, active/retail, production, and open space uses, would be compatible with the WLUP. The proposed project would provide a range of open spaces and public access areas, including areas for civic gatherings and public access to the perimeters of the piers, linking the development of new commercial activities to that of new open space and public access areas. The proposed project would also rehabilitate and reuse the sheds, aprons, and the valley on Pier 48.

In the WLUP, the eastern portion of Seawall Lot 337 is identified as an "existing maritime area." Its northern portion is within a "waterfront mixed-use opportunity area," and the frontage along China Basin (China Basin Park) is identified as "open space and public access." The proposed project would conflict with the "existing maritime area" designation in the WLUP, but the proposed use of the portion of the frontage along China Basin for an expanded China Basin Park would be generally consistent with the "open space and public access" designation. As part of the project approval process, the Port would seek amendments to the WLUP to reflect land use designations that are consistent with the proposed project and the SUD. The amendment to the WLUP would modify the "existing maritime area" designation at the project site to "waterfront mixed-use opportunity area" by amending the WLUP's Map A, Maritime Uses, and the South Beach/China Basin Waterfront Subarea Map to reflect this change and amending the uses listed for Seawall Lot 337 and Pier 48 in the WLUP's Acceptable Land Use Table for the South Beach/China Basin area to reflect the uses proposed for the project. The WLUP's Development Standards for Pier 48 would also be amended to reflect standards that are consistent with the proposed rehabilitation and reuse of the pier, and the WLUP's Waterfront Design and Access Element would be amended to replace the design criteria for Seawall Lot 337 to reflect the mixed uses that have been proposed under the project. These WLUP amendments would require approval by the San Francisco Port Commission.

The proposed project would result in a policy conflict with the WLUP because land uses under the proposed project would not be consistent with the currently designated land uses under the WLUP. However, the amendments to the WLUP would remedy this policy conflict. This is further discussed in Section 4.A *Land Use and Land Use Planning*.

MISSION BAY SOUTH REDEVELOPMENT PLAN AREA

The Mission Bay South Redevelopment Plan, established in 1998, created the basic land use controls for the Mission Bay South Redevelopment Plan area. As shown in Figure 4.A-3 in Section 4.A, *Land Use and Land Use Planning*, the Mission Bay South Redevelopment Plan area is generally bounded by Mission Creek on the north, Terry A, Francois Boulevard on the east, Seventh Street on the west, and Mariposa Street on the south but excludes Seawall Lot 337, with the exception of Parcel P20. Parcel P20 is a narrow (approximately 0.3-acre) strip along the southern edge of Seawall Lot 337. The major objectives of the Mission Bay South Redevelopment Plan are to eliminate blighting influences and correct environmental deficiencies; retain and promote academic and research activities associated with the University of California, San Francisco (UCSF), Mission Bay campus; assemble land into parcels suitable for modern, integrated development; replan, redesign, and develop undeveloped and underdeveloped areas; provide flexibility to respond to market conditions; provide opportunities for participation by owners in redevelopment of their properties; strengthen the community's supply of housing; strengthen the economic base of the plan area; facilitate emerging commercial/industrial sectors; facilitate public transit opportunities; provide land for publicly accessible uses; and achieve the objectives expeditiously.

Development within the redevelopment area is controlled through redevelopment plans and designs for development; owner participation agreements between the Office of Community Investment and Infrastructure (successor agency to the Redevelopment Agency) and the original master developer, Catellus Development Corporation (now held by FOCIL-MB LLC); and interagency cooperation agreements. Mission Bay is a mixed-use, transit-oriented development.

Parcel P20 is identified as open space in the redevelopment plan. This parcel was originally intended to be a thin landscape buffer between the residential uses that were to be built on the south side of Mission Rock Street and then-existing industrial uses at Seawall Lot 337.

The open space designation is limited to recreational uses and uses that are accessory to and supportive of recreational use. Accessory uses include, but are not limited to, kiosks, pushcarts, and accessory parking. The redevelopment plan contains the following relevant objective and policies, which are applicable to Parcel P20:

- Objective 6. Provide a variety of open spaces to serve the Mission Bay South community and augment the city's open space network.
- Policy 1. Create parks, open space, and recreational facilities within a comfortable walking/wheelchair distance that serve the needs of Mission Bay South residents, workers, and visitors of all ages and are accessible to everyone, including the physically disabled and the elderly.

- Policy 2. Create an open space network that provides walking, jogging, and bicycle paths between recreation and open space areas throughout Mission Bay South, and provide connections to citywide pedestrian, bicycle, and open space networks where applicable.
- Policy 3. Orient development and parks, public and private open space, and pedestrian areas to facilitate solar access and wind protection for public open space where feasible and consistent with the land uses and intensities contemplated by this plan.
- Policy 4. Enhance parks and open spaces by maintaining view corridors from such areas.

As noted above, only Parcel P20 and no other portion of the project site is within the Mission Bay South Redevelopment Plan area. Development on this portion of the project site would conflict with this plan because Parcel P20 would be developed with a new parking structure and residential development on Block D and future development on Block H rather than uses consistent with its open space designation. To alleviate the conflict with the redevelopment plan, an amendment to the Mission Bay South Redevelopment Plan boundaries would be required to remove Parcel P20 from the plan area. However, because the narrow shape and location of Parcel P20 along the edge of the Mission Bay South Redevelopment Plan area make it unlikely to be developed as open space, removal of Parcel P20 from the plan area, in itself, would not conflict with any of the open space policies in the plan. Assembly Bill (AB) 2797, approved by the governor on September 23, 2016, streamlined the process for amending the Mission Bay South Redevelopment Plan area map and related documents. It provides that a plan amendment approved by the successor agency to the Redevelopment Agency (the Commission on Community Investment and Infrastructure) or the Board of Supervisors regarding removal of Parcel P20 from the Mission Bay South Redevelopment Plan area shall not require approval by the State Department of Finance or the controller, as otherwise would have been required under the law that dissolved redevelopment agencies. The amendment for the proposed project would be approved by the Board of Supervisors and the Commission on Community Investment and Infrastructure.

The proposed project would result in a policy conflict with the Mission Bay South Redevelopment Plan at Parcel P20 because land uses under the proposed project at Parcel P20 would not be consistent with planned land uses under the Mission Bay South Redevelopment Plan. No environmental impacts would result from removing Parcel P20 from the plan because, given its size and immediate adjacency to Mission Rock Street, it is unlikely that open space could be developed on this parcel. The proposed amendment to remove Parcel P20 from the Mission Bay South Redevelopment Plan would remedy this policy conflict. This is further discussed in Section 4.A, *Land Use and Land Use Planning*.

PLANNING CODE

The Planning Code, along with the accompanying zoning map, establishes land uses as well as performance and development standards, such as height and bulk districts, and the regulations that govern development within those districts. Section 101.1(b) of the Planning Code, added in 1986 by Proposition M, identifies a set of Priority Policies, included in the General Plan, that form the basis for resolving General Plan inconsistencies. Included within Section 101.1(b) are policies to preserve a diverse economic base, landmarks and historic buildings, existing housing and neighborhood character, existing and future neighborhood-serving retail uses, parks and open space, and affordable housing.

LAND USE DISTRICTS

Different components of the project site are subject to different zoning use classifications. Seawall Lot 337, Parcel P20, and China Basin Park are within a Mission Bay Open Space (MB-OS) Use District.[1,2] Only recreational uses and uses that are incidental to and supportive of recreational use are permitted in the district, including limited structures for or incidental to and supportive of use of the area for active and passive recreation. Pier 48 is within the Heavy Industrial (M-2) Use District. The M-2 Use District is generally separated from residential and commercial areas and allows heavy industrial uses, but some uses are permitted only as a conditional use or at some distance from residential districts. Residential use is allowed in the M-2 Use District at a density of one dwelling unit per 800 gsf of lot area or the density of the nearest R District, whichever provides the greatest density.

The proposed uses at Pier 48 would be allowed within the existing M-2 Use District. However, the proposed uses at Seawall Lot 337 and Parcel P20 would be inconsistent with the MB-OS Use District. An SUD would be created to update allowable land uses at the project site. As discussed above and illustrated in Figure 2-4 in Chapter 2, *Project Description*, the SUD would allow for a mixed-use development that responds to future market conditions. The proposed new zoning would permit the following uses, all of which would be located above lower floors of active/retail/production:

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1 Seawall Lot 337 was rezoned in 1991 as part of an earlier Mission Bay Redevelopment Plan that the Board of Supervisors later rescinded without rescinding the rezoning of Seawall Lot 337. With the exception of Parcel P20, the current Mission Bay Redevelopment Plan, adopted in 1998, does not include the project site.

2 As described in Chapter 2, *Project Description*, the Mission Rock Height and Bulk District was established by Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative, which was approved by San Francisco voters on November 3, 2015. Proposition D amended Zoning Map Sheet HT08 to change the height and bulk classifications of the project site from OS and 40-X to a new Mission Rock Height and Bulk District. Proposition D also amended the Planning Code by adding a new section, Section 291, which governs the new Mission Rock Height and Bulk District.

- Blocks A, D1, F, and K would be zoned for primarily residential use.
- Blocks B, C, E, and G would be zoned for primarily commercial use.
- Blocks H, I, and J would be zoned for primarily commercial or primarily residential uses.
- Block D2 would be zoned to allow structured public parking up to 100 feet above grade.
- Permitted uses on Pier 48 would include industrial, general office and storage, active/retail, restaurant, tour, exhibition, event, and maritime uses.
- Assembly uses and other special events would be permitted at China Basin Park (for approximately 5,000 people) and Mission Rock Square (for approximately 2,000 people).

The project sponsor would seek approval to rezone the project site through an SUD and amend the Planning Code and zoning map to be consistent with the SUD controls. This would require a Planning Commission recommendation followed by Board of Supervisors approval of the Planning Code and zoning map amendments, which would include creation of a new Planning Code section establishing permitted uses, building forms, and other development controls for the new SUD, and amendment of the zoning map to show the boundaries of the new SUD. Design Controls would be adopted that would include a design review process for all vertical and open space development on the project site. The Planning Code text amendment would reference the Design Controls document. With the adoption of the proposed SUD and Design Controls, the proposed project would be made consistent with the Planning Code and zoning map. Physical environmental impacts would not result from these inconsistencies; this is further discussed in Section 4.A *Land Use and Land Use Planning*.

HEIGHT AND BULK DISTRICT (PROPOSITION D)

The entire project site falls within the Mission Rock Height and Bulk District, included as Section 291 of the Planning Code. As explained above, Map 4 (Urban Design Guidelines for Height of Buildings) and Map 5 (Urban Design Guidelines for Bulk of Buildings) of the General Plan's Urban Design Element refer to the Mission Rock Height and Bulk District, which establishes the height and bulk regulations that would be applicable at the project site. Section 291 was added to the Planning Code with the passage of Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative, on November 3, 2015. Section 291 establishes height and bulk limits for the Mission Rock Height and Bulk District and requires the adoption of design controls for the district to guide the design of improvements within established height limits.

The proposed project and proposed Design Controls are consistent with the height and bulk restrictions set forth in Section 291 for the Mission Rock Height and Bulk District and satisfy the requirement to adopt Design Controls for the district.

BICYCLE PLAN

The City's Bicycle Plan comprises a citywide bicycle transportation plan and implementation strategy for specific bicycle improvements. In the project vicinity, Terry A. Francois Boulevard includes a Class II bicycle lane; it is also part of the San Francisco Bay Trail. China Basin Park contains a paved bicycle/pedestrian pathway. The Bicycle Plan identifies short- and long-term bicycle improvement projects within the city. In the project vicinity, the Bicycle Plan includes proposed improvements to Lefty O'Doul Bridge and Terry A. Francois Boulevard, to the south.

As described in Chapter 2, *Project Description*, the proposed project would develop Bridgeview Street, a proposed interior neighborhood street and bicycle connection, to directly connect with Mission Rock Street at the south end of the project site. The incorporation of Parcel P20 into the proposed project would create a bicycle connection through the project site from the Blue Greenway (south of Mission Rock Street along Terry A. Francois Boulevard). The proposed waterfront promenade and access to the Pier 48 aprons would include bicycle/pedestrian pathways. The proposed interior streets within the project site would be designed to emphasize varied and safe bicycle and pedestrian access. Implementation of the proposed project could conflict with the Bicycle Plan because bicycle safety and accessibility would be affected at Pier 48; further, hazardous pedestrian conditions could result at the intersection of Fourth and Mission Rock Streets. However, these potential impacts would be partially reduced through implementation of mitigation measures, thereby reducing the environmental impact and avoiding a conflict with the Bicycle Plan. See Section 4.E, *Transportation and Circulation*, for a more detailed discussion of potential impacts on bicyclists as well as a discussion of mitigation measures.

TRANSIT FIRST POLICY

The City's Transit First Policy, added to the City Charter in 1973 and subsequently amended and codified in 2007 in Section 8A.115, was developed in response to the impacts of freeways on the city's urban character. The policy is aimed at restoring balance to an automobile-dominated transportation system and improving overall mobility for residents and visitors. The Transit First Policy encourages multi-modal transportation, the use of transit, and other alternatives to the prevalence of single-occupant vehicular travel. In addition, the policy emphasizes maintenance and expansion of the local transit system and the improvement of regional transit coordination.

As described on page 2-14 of Chapter 2, *Project Description*, the project site is adjacent to Mission Bay, a developing transit-oriented area. Numerous local public transit routes serve the project site, including the San Francisco Municipal Railway (Muni) T-Third and N-Judah light-rail lines; Muni coach routes 10-Townsend, 30-Stockton, 45-Union/Stockton, and 47-Van Ness; and Muni's 80X, 81X, and 82X motor coach lines. Regional transit providers in the project vicinity

include Caltrain, Golden Gate Transit, AC Transit, the Blue & Gold Fleet, the Water Emergency Transportation Authority (East Bay and Peninsula) ferries, and Bay Area Rapid Transit. As discussed in further detail in Section 4.E, *Transportation*, the proposed project includes a Transportation Demand Management (TDM) Program that would provide a comprehensive strategy for managing the transportation demands created by the project. The TDM Program developed for the proposed project includes measures to encourage the use of transit and other modes of transportation and discourage use of single-occupancy automobiles or automobiles in general (e.g., unbundled parking, bicycle parking, improved walking conditions, carshare parking, and real-time transportation information displays). Because the project site is located in proximity to numerous transit routes and the proposed project includes a TDM Program, the use of alternative transportation by project employees and residents is expected to be high. Implementation of the proposed project could nevertheless conflict with the Transit First Policy as a result of the queuing that would occur from operation of the new parking garages, which could cause delays for transit (Muni T line). Additionally, delays for transit would result from project-related queuing, hazardous conditions for bicyclists could result from conflicts at Pier 48, and hazardous pedestrian conditions could result at the intersection of Fourth and Mission Rock Streets. However, these potential impacts would be partially reduced through implementation of mitigation measures, thereby reducing the environmental impact. Generally, the project would still be consistent with the Transit First Policy. See Section 4.E, *Transportation and Circulation*, for a more detailed discussion of potential impacts on transit and mitigation measures.

BETTER STREETS PLAN

The Better Streets Plan, adopted in 2010, identifies policies and standards for the design, location, and dimensions of pedestrian and streetscape items in the public right-of-way, including crosswalks, bulb-outs, street furniture, planters, and trees. The Better Streets Plan is a joint document of the Planning Department, San Francisco Public Works, San Francisco Municipal Transportation Agency (MTA), and the San Francisco Public Utilities Commission. The plan seeks to balance the needs of all city street users and includes goals, objectives, policies, and design guidelines as well as future strategies to improve the pedestrian realm in San Francisco. Pedestrian areas include primarily sidewalks and crosswalks but, in some instances, portions of roadways. Major concepts covered in the Better Streets Plan range from increased pedestrian safety and accessibility features to improved ecological performance of streets and streetscape greening.

As described in Chapter 2, *Project Description*, all streets within the project site would be designed to comply with the City of San Francisco's Better Streets Plan standards and guidelines. See Figure 2-11 in Chapter 2, *Project Description*, for a depiction of the proposed street network. The proposed street network would connect to surrounding Mission Bay streets

and introduce internal streets on the project site to further break the blocks into walkable distances. The streets would be part of the public realm, designed to emphasize varied and safe bicycle and pedestrian access, and integrated with active ground-floor uses across the project site. The widths of the proposed sidewalks would reduce street crossing distances. On Exposition Street, bulb-outs would be installed as a traffic-calming measure and as areas for stormwater treatment gardens. Tabletop crossings at the intersection of Exposition Street/Long Bridge Street and the Shared Public Way would increase pedestrian visibility and slow traffic. Street rooms[3] could be included on the sidewalks as social areas; these would include plantings, fixed and moveable furnishings, and kiosks.

The Shared Public Way and Terry A. Francois Boulevard would be designed as shared streets. These streets would facilitate pedestrian access, circulation, and use and complement the ground-floor activities of surrounding buildings. The Shared Public Way would conform to the applicable street typology, as defined in the San Francisco Better Streets manual (i.e., a street without curbs and affording minimal one-way vehicular access for drop-offs and loading). Terry A. Francois Boulevard would conform to the working waterfront and shared streets typology, with manufacturing activities that would encourage bicycle and pedestrian access to the waterfront.

Given these project components, the proposed project would not obviously conflict with the Better Streets Plan.

SUSTAINABILITY PLAN

The City's Sustainability Plan[4] is intended to establish sustainable development as a fundamental goal of municipal public policy. It addresses both specific and general environmental issues. The specific issues addressed by the Sustainability Plan are related to air quality; biodiversity; energy, climate change, and ozone depletion; food and agriculture; hazardous materials; human health; parks, open spaces, and streetscapes; solid waste; transportation; and water and wastewater. Other, more general issues include the economy and economic development, environmental justice, municipal expenditures, public information and education, and risk management. The Sustainability Plan promotes energy reduction through implementation of the San Francisco Green Building Ordinance and the Municipal Green Building Ordinance. New private-sector residential buildings, nonresidential buildings greater than 5,000 gsf, and major renovations to existing buildings that would exceed 25,000 gsf are required to conform to energy conservation standards specified by the Port of San Francisco Building Code, including the Port of San Francisco

[3] Street rooms are intimate social spaces within the streetscapes that are characterized by their small scale and special materials.

[4] City of San Francisco Commission on the Environment. 1997. *Sustainability Plan*. Available: http://sustainablecity.org/Plan/Intro/intro.htm. Accessed: December 8, 2016.

Green Building Standards Code, and intended to reduce greenhouse gas (GHG) emissions associated with new construction and rehabilitation activities, increase energy efficiency, and realize other environmental gains.

Under the Port of San Francisco Green Building Standards Code, all large commercial buildings and major renovations (more than 25,000 gsf) must achieve Leadership in Energy and Environmental Design (LEED) Gold certification from the U.S. Green Building Council, and all multi-family residential buildings must achieve LEED Silver certification. As described in Chapter 2, *Project Description*, the proposed project includes sustainability standards and guidelines to reduce the energy demand of the proposed buildings and uses and ensure compliance with the Sustainability Plan and Climate Action Plan.[5] As part of complying with the Port's Green Building Standards Code, the goal for overall development of the project would include LEED Gold certification for all commercial office/retail buildings and LEED Silver certification for all residential development onsite, as outlined in the Port of San Francisco Green Building Standards Code and other Port codes. Therefore, the proposed project would not conflict with the Sustainability Plan.

ACCOUNTABLE PLANNING INITIATIVE (PROPOSITION M)

Voter-approved Proposition M (1986), the Accountable Planning Initiative, added Section 101.1 to the Planning Code to establish eight Priority Policies and amended the General Plan in similar fashion. The Priority Policies establish general policies and objectives to guide land use decisions. To the extent that the Priority Policies relate to physical environmental issues, those physical environmental issues are addressed in Chapter 4, *Environmental Setting and Impacts,* of this Draft EIR. These policies, and the sections of this Draft EIR that address the environmental issues associated with the policies, are:

1. Existing neighborhood-serving retail uses shall be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses enhanced (see Section 4.A, *Land Use*, and Section 4.C, *Population and Housing*);
2. Existing housing and neighborhood character shall be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods (see Section 4.B, *Aesthetics*);
3. The city's supply of affordable housing shall be preserved and enhanced (see Section 4.C, *Population and Housing*);

[5] San Francisco Department of the Environment and San Francisco Public Utilities Commission. 2004. *Climate Action Plan for San Francisco.* September. Available: https://sfenvironment.org/sites/default/files/fliers/files/climateactionplan.pdf. Accessed: December 8, 2016.

4. Commuter traffic shall not impede Muni transit services or overburden our streets or neighborhood parking (see Section 4.E, *Transportation and Circulation*);
5. A diverse economic base shall be maintained by protecting the industrial and service sectors from displacement due to commercial office development and future opportunities for resident employment and ownership in these sectors shall be enhanced (see Section 4.A, *Land Use*, and Section 4.C, *Population and Housing*);
6. The city shall achieve the greatest possible preparedness to protect against injury and the loss of life in an earthquake (see Section 4.J, *Public Services,* and Section 4.M, *Geology and Soils*);
7. Landmarks and historic buildings shall be preserved (see Section 4.D, *Cultural Resources*); and
8. Parks and open space and their access to sunlight and vistas shall be protected from development (see Section 4.B, *Aesthetics*, and Section 4.I, *Wind and Shadow*).

Prior to issuing a permit for any project that requires an EIR under CEQA, and prior to taking any action that requires a finding of consistency with the General Plan, the City is required to find that the proposed project is consistent with the Priority Policies. Staff reports and approval motions prepared for the decision-makers will include a comprehensive project analysis and findings regarding the consistency of the proposed project with the Priority Policies. Because the proposed project cannot be approved without a finding of consistency with the Priority Policies, conflict with the Priority Policies would not occur.

B. REGIONAL PLANS AND POLICIES

BCDC BAY PLAN AND SAN FRANCISCO WATERFRONT SPECIAL AREA PLAN

BCDC is responsible for protecting and enhancing San Francisco Bay (Bay) as well as encouraging responsible and productive use of the Bay for this and future generations. The BCDC Bay Plan covers all of San Francisco Bay, a shoreline band located between the Bay shoreline and a line that covers land 100 feet landward of and parallel to the Bay shoreline, salt ponds and managed wetlands that have been diked off from the Bay, and certain waterways. The BCDC San Francisco Waterfront Special Area Plan, (Special Area Plan), an element of the Bay Plan, contains policies specific to Port land that is under BCDC jurisdiction. A portion of the project site falls within the shoreline band and is subject to BCDC review for consistency with the Bay Plan and the Special Area Plan.

Among Bay Plan policies that affect San Francisco's waterfront areas are port expansion and development, development and preservation of land for water-related industry, development of waterfront parks and recreational facilities, and the encouragement of private shoreline

development. The Bay Plan finds that there is minimal foreseeable future demand for new water-related industrial sites around the Bay and that such uses can be accommodated at existing water-related industries. The Bay Plan also notes that the Bay is the most important open space in the region and that it, along with its shoreline, provides unique recreational opportunities.

Bay Plan policies call for the preservation of scenic Bay views; the provision of diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, around the Bay; and encouragement for the development of water-oriented commercial recreational establishments, such as restaurants, specialty shops, private boatels, recreational equipment concessions, and amusements in urban areas adjacent to the Bay. In addition, the Bay Plan encourages the preservation of historic structures and districts, including public access to the exterior and, where appropriate, the interior of these structures.

The Bay Plan also includes the "Replacement Fill Policy," also known as the "50 Percent Rule," which includes certain public access and fill removal requirements that apply to publicly owned pile-supported piers, including piers along the San Francisco waterfront. The 50 Percent Rule requires pier development projects that include seismic retrofit or major substructure repair to limit the development to 50 percent of the pier area for water-oriented commercial recreational uses only. The remaining 50 percent of the pier area is required to provide onsite public access, fill removal, or a combination of the two.[6] As explained below, the California legislature amended BCDC's Special Area Plan to expand the area within which BCDC is authorized to exempt work from the 50 Percent Rule to include Pier 48, thereby alleviating any potential inconsistency.

In 1996, BCDC and the Port initiated a public process to address inconsistencies between the Port's draft WLUP and BCDC's Special Area Plan, culminating in conforming amendments to both plans in 2000. Because the 50 Percent Rule impaired the Port's ability to rehabilitate its piers and wharves north of China Basin, which were all believed to be eligible for listing as historic resources, amendments to the BCDC Special Area Plan were made. The amendments eliminated the 50 Percent Rule from Port's pile-supported piers, bulkheads, and wharves located between Pier 35 and China Basin, allowing the broader range of land uses allowed under the Burton Act and public trust doctrine. To meet BCDC's public-access and fill-removal mission objectives, the amendments also required the Port to remove specified piers and develop two major waterfront parks at the Pier 27 Cruise Terminal and Brannan Street Wharf on the South Beach waterfront; these were subsequently constructed.

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[6] San Francisco Bay Conservation and Development Commission. n.d. *San Francisco Bay Plan*. Available: http://www.bcdc.ca.gov/laws_plans/plans/sfbay_plan#2. Accessed: July 17, 2014.

The Special Area Plan amendments also required the Port to nominate its finger pier facilities for recognition in the Embarcadero Historic District and listing in the National Register of Historic Places. The analysis for the nomination determined that Pier 48 is within the Embarcadero Historic District. The district was added to the National Register of Historic Places in 2006. Pier 48 would also have been subject to the 50 Percent Rule of the Bay Plan because of its location south of China Basin; however, AB 2797, approved by the governor on September 23, 2016, amended the Special Area Plan to exempt Pier 48 from the 50 Percent Rule, similar to the Port waterfront north of the project site.

The Special Area Plan designates Pier 48 as a port priority use area where maritime cargo shipping, public access, small boat dock facilities, and a limited amount of commercial recreation are allowed. The Special Area Plan identifies permitted uses for replacement fill on Pier 48 as maritime, public access, and marina uses. Its policies emphasize the need for major new developments to highlight maritime features and encourage the preservation of Bay views through a low-scale building height and bulk, as well as pedestrian access to the piers; minimize shade on pier public access areas; and preserve the waterfront's historic character. The proposed project would be consistent with these policies through its preservation of the existing structures on Pier 48 (which would be done consistent with the Secretary of the Interior's standards) and the provision of public pedestrian access to presently inaccessible apron areas.

The Special Area Plan also designates approximately 6 acres on the eastern edge of Seawall Lot 337 as a port priority use area where maritime cargo shipping, public access, small boat dock facilities, and a limited amount of commercial recreation are allowed. The proposed project would be consistent with applicable policies through the provision of public pedestrian access to presently inaccessible apron areas of Pier 48.

BCDC reviews permits for proposed projects in the shoreline band for consistency with the McAteer-Petris Act, the Bay Plan, and the Special Area Plan,[7] as amended by AB 2797.

SAN FRANCISCO BAY AREA SEAPORT PLAN

The San Francisco Bay Area Seaport Plan (Seaport Plan), the product of a cooperative planning effort between BCDC and MTC and the maritime element of MTC's regional transportation plan, is also incorporated into BCDC's Bay Plan. BCDC uses the Seaport Plan to guide regulatory and planning consistency decisions; MTC uses it as a component of project funding decisions. One goal of the Seaport Plan is to reserve sufficient shoreline areas that will accommodate future growth in maritime cargo and minimize the need for new Bay fill for port development.

[7] Special Area Plan, p. 7.

The Seaport Plan identifies the area south of China Basin, including Pier 48 and the eastern portion of Seawall Lot 337, as a port priority use area. The Seaport Plan reserves Pier 48 as a future site for neo-bulk cargo shipping and the eastern 6 acres of Seawall Lot 337 as a backland area for potential cargo operations.[8] Pier 48 has not been used for neo-bulk cargo operations at any time since the Seaport Plan was adopted in 2006, nor does the Port foresee any future demand for cargo use there because capacity at the Port's break bulk facility at Pier 80 exceeds demand. AB 2797 removed the port priority use designation from Pier 48 and a portion of Seawall Lot 337, effective January 1, 2017. AB 2797 directs BCDC and MTC to revise the Seaport Plan maps to remove the port priority use designation from these areas. However, the removal from the port priority use designation applies regardless of whether these conforming changes to the Seaport Plan have been made. With the changes to the Seaport Plan required under AB 2797, the proposed project would be consistent with the Seaport Plan.

ASSOCIATION OF BAY AREA GOVERNMENTS/MTC PLAN BAY AREA

Plan Bay Area is the Regional Transportation Plan/Sustainable Communities Strategy adopted for the Bay Area by the Association of Bay Area Governments and MTC in fulfillment of the requirements of Senate Bill (SB) 375 (2008). The purpose of SB 375 is to meld regional transportation planning with land use strategies that will reduce future GHG emissions and meet regional targets. Pursuant to SB 375, Plan Bay Area identifies transit priority project areas and planned development areas, which are intended to accommodate future urban development as well as planned conservation areas that provide habitat, agricultural, and other benefits within the region.

The project site is identified by Plan Bay Area as a transit priority project area that is associated with future job growth. The project site is also located within the Port of San Francisco Priority Development Area (PDA), which Plan Bay Area designates as a place where growth would be appropriate to meet the goals of SB 375. Plan Bay Area contains general land use policies, and as an urban infill project, the proposed project is consistent with those policies. See Section 4.C, *Population and Housing*, for a full discussion of the proposed project's effects on planned growth.

SB 375 specifies that Plan Bay Area does not replace or otherwise impinge on local governments' planning and zoning policies and regulations. As a result, although Plan Bay Area provides an outline for GHG emissions reductions through future compact development patterns, it does not direct the actions of San Francisco. Notwithstanding, it is noted that, as discussed in Section 4.H, *Greenhouse Gas Emissions*, the proposed project would be consistent

[8] The eastern edge of seawall lot 337 is designated as backland support space for Piers 48 and 50. Backland support space includes areas intended for storing materials or loading and unloading vessels.

with San Francisco's Greenhouse Gas Reduction Strategy. Additionally, as discussed in Section 4.E, *Transportation and Circulation*, the proposed project would not result in a substantial increase in the number of vehicle miles traveled or induce automobile travel substantially.

OTHER REGIONAL PLANS AND POLICIES

Other regional plans and policies, such as the Bay Area Air Quality Management District's *Clean Air Plan*, the San Francisco Bay Regional Water Quality Control Board's *Water Quality Control Plan for the San Francisco Bay Basin*, and the San Francisco County Transportation Authority's *San Francisco Congestion Management Program*, directly address specific environmental issues or contain objectives or standards to maintain or improve specific characteristics of the city's, as well as the region's, physical environment. These plans are discussed in more detail in the relevant resource sections of this Draft EIR, as appropriate. As discussed therein, the proposed project is not expected to conflict substantially with any of these adopted environmental plans or policies.

C. PUBLIC TRUST DOCTRINE

The Public Trust Doctrine governs the use of tidal and submerged lands, including former tidal and submerged lands that have been filled. It is not a codified set of laws but a common law doctrine that has been established in federal and state court decisions as well as decisions and interpretations by the California State Lands Commission and the California Attorney General. The purpose of the Public Trust Doctrine is to ensure that land that adjoins the state's waterways or is physically covered by those waters remains committed to water-oriented uses. Uses for public trust lands are generally limited to waterborne commerce; navigation; fishery uses; water-oriented recreation (e.g., fishing, swimming, boating), including commercial facilities that must be located on or adjacent to water; and environmental preservation, including natural resource protection and wildlife habitat study. Ancillary or incidental uses that promote public trust uses or accommodate the public's enjoyment of public trust lands are also permitted (e.g., hotels, restaurants, specialty retail establishments). Because the Public Trust Doctrine is based on judicial cases, there is no zoning code or general statute that sets forth a list of permitted public trust uses.

Waterfront land owned by the Port of San Francisco is public trust land. The proposed placement of certain non-trust uses on public trust land within the project site would be inconsistent with the Public Trust Doctrine. In order to resolve issues regarding the public trust status of portions of the project site, state legislation (SB 815 and AB 2797) has been enacted, authorizing the State Lands Commission to lift public trust use restrictions on Seawall Lot 337 for up to 75 years, or until December 31, 2105. Additionally, AB 2797, approved by the governor

on September 23, 2016, authorizes actions to add Parcel P20 to Seawall Lot 337, which lifted public trust restrictions on Parcel P20. This allows implementation of land uses at the project site that would not be permitted under the Public Trust Doctrine.

D. SUMMARY

The discussion presented in this section indicates that the proposed project could conflict with policies in the Transportation Element of the General Plan, San Francisco Bicycle Plan, and Transit First Policy related to transit delays and potential hazardous conditions for bicyclists and pedestrians. However, these potential impacts would be reduced through implementation of mitigation measures, thereby partially reducing the environmental impact and avoiding a conflict with these plans and policies. Conflicts with the WLUP and Mission Bay South Redevelopment Plan related to the types of land uses permitted under each plan could also occur. Additionally, implementation of the proposed project could conflict with the allowable uses in the Planning Code. The staff report for the Planning Commission will evaluate the consistency of the proposed project with General Plan policies and applicable Planning Code regulations. Project applications include requests for amendments to the WLUP to modify the land use designation, Acceptable Land Use Table, Development Standards, and Waterfront Design and Access Element as well as amendments to the Mission Bay South Redevelopment Plan to remove Parcel P20 from the plan area. The project sponsor would seek approval to rezone the project site to a new SUD that would establish permitted uses, building forms, and other development controls consistent with the proposed project through amendments to the Planning Code and zoning map. With the adoption of these proposed amendments to the WLUP, Mission Bay South Redevelopment Plan, and the Planning Code and zoning map, the proposed project would be consistent with the WLUP, Mission Bay South Redevelopment Plan, and the Planning Code and zoning map.

4. ENVIRONMENTAL SETTING AND IMPACTS

INTRODUCTION

This chapter describes the existing environmental conditions in the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project) area, the regulatory framework applicable to the proposed project, the thresholds used to determine the significance of potential impacts, the construction and operational impacts that may occur as a result of project implementation, and measures to mitigate identified significant impacts.

ORGANIZATION OF THIS CHAPTER

Each environmental topic considered in this chapter comprises three primary sections: 1) setting, 2) regulatory framework, and 3) impacts and mitigation measures. An overview of the general organization and the information provided in the three sections is provided as follows:

- *Environmental Setting*. The setting section for each environmental topic provides a description of the baseline physical setting for the project site and its surroundings at the beginning of the environmental review process (e.g., existing land uses, noise environment, traffic conditions).
- *Regulatory Framework*. The regulatory section provides an overview of statutory and regulatory considerations that are applicable to the specific environmental topic.
- *Environmental Impacts*. The impacts and mitigation measures section for each environmental topic presents a discussion of the impacts (i.e., the changes to baseline physical environmental conditions) that could result from implementation of the proposed project. Where applicable, both construction and operational impacts are analyzed as well as project-specific and cumulative impacts. The section begins with the criteria of significance, which establish the metric by which significance is determined. The latter part of this section assesses the impacts occurring as a result of project implementation and mitigation measures, if required. Project impacts are organized into separate categories, based on the criteria listed in each topical section.

Impacts are numbered and shown in bold type, and the corresponding mitigation measures, where identified, are numbered and indented, following the impact statements. Impacts and mitigation measures are numbered consecutively within each topic and include an abbreviated reference to the impact section (e.g., LU). The following symbols are used for individual topics:

LU: Land Use
AE: Aesthetics
PH: Population and Housing
CP: Cultural and Paleontological Resources
TR: Transportation and Circulation
NO: Noise
AQ: Air Quality
GG: Greenhouse Gases
WS: Wind and Shadow
PS: Public Services and Recreation
UT: Utilities and Service Systems
BI: Biological Resources
GE: Geology and Soils
HY: Hydrology and Water Quality
HZ: Hazards and Hazardous Materials

ENVIRONMENTAL BASELINE

According to Section 15125 of the California Environmental Quality Act (CEQA) Guidelines:

> An EIR must include a description of the physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines an impact is significant.

This environmental impact report (EIR) generally uses conditions at the time of publication of the notice of preparation (NOP) (December 2013) with the addition of one additional project as the environmental baseline against which project impacts are determined. This project, Mission Bay Block 1, is currently under construction and will be fully operational by the time the proposed project is constructed. Because of this, the adjacency of Mission Bay Block 1 to the proposed project site, and the localized impacts that could result from its operation, this project was assumed in the (adjusted) baseline for the environmental topics of this Draft EIR. However, a further updated baseline is used for the transportation analysis to reflect the anticipated conditions at the time the project becomes operational. This is because there have been numerous approved, funded, or constructed changes to the transportation network in the vicinity since publication of the NOP. These changes include additional buildings or facilities that have been constructed since publication of the NOP, projects under construction as of July 2015, or projects that were approved and funded by July 2015 and that would be either under construction or completed before first occupancy of the proposed project. Additionally, the buildout year for the proposed project is 2023, and the cumulative analysis year is 2040.

The Central Waterfront and Mission Bay neighborhoods are currently experiencing rapid change and development. Under both land use assumptions, construction is projected to begin in 2017, then be phased over an approximately 6-year period, concluding in 2023. Proposed development is expected to involve four phases. The proposed project is likely to complete construction well after a number of approved transportation improvements and land use development projects are implemented. These projects were under construction as of the date of publication of the NOP or are approved and reasonably likely to be completed and occupied or in operation when the proposed project is expected to be implemented. The adjusted "existing conditions," which include these development projects, form an appropriate baseline against which to measure many of the analysis topics in the EIR for the proposed project rather than the existing conditions as of the time when the NOP was published.

CEQA METHODOLOGY

Under (CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment. The guidelines for implementing CEQA direct that this determination be based on scientific and factual data, including the entire record for the proposed project, and not on argument, speculation, or unsubstantiated evidence. Each impact and mitigation measure section of this chapter is prefaced by specific criteria, which have been developed by the San Francisco Planning Department for use in determining whether an impact is significant.

CLASSIFICATION OF IMPACTS

Impacts are categorized by type of impact, as follows:

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

- *Significant and Unavoidable (SU)*. An adverse physical environmental impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations and for which there are no feasible mitigation measures.

MITIGATION MEASURES

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

APPROACH TO THE ANALYSIS

The analysis of each environmental topic includes an evaluation of the potential environmental impacts associated with implementation of either the High Commercial Land Use Assumption or High Residential Land Use Assumption. As discussed in Chapter 2, *Project Description*, both assumptions would include the same building program, except for on Blocks H, I, and J, which would have greater commercial or residential uses and different heights, either 90 or 120 feet, depending on the land use assumption. For an applicable topic, the analysis relies on which of the two land use assumptions would result in the greatest impacts. In many cases, especially those topics with impacts that are commensurate to building footprint (such as biological or cultural resources) rather than size of development in square feet or person trips, for example, the analysis applies to both land use assumptions because the mix of land uses would not result in different effects on resources.

AESTHETICS AND PARKING ANALYSIS

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, effective January 1, 2014. Among other provisions, SB 743 amended CEQA by adding Public Resources Code Section 21099, which states that aesthetics and parking impacts of residential, mixed-use residential, or employment center infill projects located in transit priority areas are not considered significant impacts on the environment under CEQA.[1] Accordingly, a project that meets the following criteria would not result in significant environmental effects related to aesthetics or parking:

[1] See Public Resources Code Section 21099(d).

a) The project is on an infill site,

b) The project is in a transit priority area, or

c) The project is residential, mixed-use residential, or an employment center use.

The proposed Seawall Lot 337 and Pier 48 Mixed-Use Project meets the first criterion of being located on an infill site. The project site is located within the city of San Francisco, which is an urbanized area, and has been used previously for commercial and public institutional uses. The proposed project also meets the second criterion of being located within a transit priority area. The project site is within 0.5 mile of at least one stop on the San Francisco Municipal Railway (Muni) T line and within 0.5 mile of the Fourth and King Caltrain station. It is uncertain if the project fully meets the third criterion of being a residential, mixed-use residential, or an employment center use. For these reasons, as further articulated below, this EIR provides an analysis of aesthetics and parking as a conservative measure.

The proposed project would include residential, commercial, and industrial uses. Thus, the proposed project could not be characterized as strictly residential. Employment center projects must be on sites that are currently zoned for commercial uses, with a floor area ratio (FAR) of no less than 0.75. The proposed project could not be classified as an employment center project because the project site is currently zoned for either open space or industrial uses.

Mixed-use projects typically include residential, commercial, or some light industrial uses but not heavy industrial uses. The proposed brewery on Pier 48 is characterized as a heavy industrial use, per various provisions in the Planning Code (e.g., proposed on a site zoned for industrial uses); thus, this component of the project would not fit within the generally accepted classification of a mixed-use residential development.[2] With the exception of the brewery portion of the proposed project, the project would otherwise meet the criteria in Section 21099(d). The brewery constitutes an estimated 10 percent of the approximately 2.5 million gross square feet (gsf) of proposed development; thus, it would be reasonable to consider the predominate uses proposed for the site (residential, commercial, and light industrial) when determining compliance with Section 21099(d) and conclude that the proposed project meets the criteria. However, because the

[2] Per Planning Code Section 890.54, the City defines mixed-use zoning districts in Article 8 of the Planning Code. These districts generally allow all of the uses proposed as part of the project, with the exception of the brewery operation. Light manufacturing is allowed, but "food processing, including mechanized assembly line production of canned or bottled goods," is not allowed. Planning Code Section 102 defines "industrial uses" to include "food, fiber, and beverage processing 1," which including breweries. Planning Code Section 202.2, which establishes location and operating conditions for different uses, lists food, fiber, and beverage processing 1 as an industrial use in the "heavy manufacturing" category that is allowed within 50 feet of a residential use in a completely enclosed building and in PDR districts and M districts as a permitted use, except in PDR1-B districts, which is a light industrial buffer district between heavier industrial uses and residential uses (Planning Code Sections 210.3 and 210.4). The conclusion from this is that a brewery is a heavy industrial use that can be located within 50 feet of a residential use if totally enclosed.

whole of the proposed project would not strictly meet the criterion of being a residential, mixed-use residential, or employment center project, the conservative approach applied in this EIR is to analyze the impacts of the proposed project on aesthetics and parking. Furthermore, the passage of SB 743 occurred subsequent to publication of the NOP, which had indicated that this EIR would include a discussion of the aesthetics-related impacts of the proposed project. Therefore, this EIR considers aesthetics and the adequacy of parking in determining the significance of project impacts under CEQA.

APPROACH TO CUMULATIVE IMPACTS

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

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

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

For the purposes of this EIR, the analysis of the potential for the proposed project's incremental effects to be cumulatively considerable is based on past and present projects, described as part of the Environmental Setting, and a list of related proposed projects and plans identified by the City and County of San Francisco (City) and neighboring jurisdictions and/or on full implementation of the San Francisco General Plan and/or other planning documents, depending on the specific impact being analyzed. Table 4-1, Cumulative and Baseline Projects in the Site Vicinity, describes the proposed plans and projects that were considered in the cumulative analysis.

The geographic scope of the cumulative impact analyses and the specific past, present, and future projects and plans that are included in the analyses may also vary, depending on the specific environmental issue being analyzed. For instance, Section 4.B, *Aesthetics*, uses the list-based approach by considering related projects near to and immediately adjacent to the project site, given the limited nature of related impacts that would occur as a result of the proposed changes in use and associated tenant improvements. In contrast, Section 4.E, *Transportation and Circulation*, uses the projections approach by relying on the San Francisco Chained Activity

Modeling Process (SF-CHAMP) regional travel demand model, which encompasses the many individual projects that are anticipated in and surrounding the project area. Each technical section of this EIR designates the cumulative context for each cumulative impact analysis.

The EIR presents a cumulative impact analysis only where the proposed project's incremental effect would result in a less-than-significant or significant and unavoidable cumulative impact. The EIR does not present a cumulative impact analysis if the proposed project's incremental effect would result in no impact.

TABLE 4-1. BASELINE AND CUMULATIVE PROJECTS IN THE SITE VICINITY

Project/Plan	Description
Baseline Project	
Mission Bay Block 1 (Third and Channel Streets)	The proposed project would demolish the existing building and parking lot and construct approximately 350 residential units, a 250-room hotel, and approximately 50,000 gsf of retail uses.
Cumulative Projects	
Eastern Neighborhoods Plan	The Eastern Neighborhoods Plan includes four area plans: the Central Waterfront Area Plan, which includes the project site; the Showplace Square/Potrero Area Plan, west of Interstate 280); the Mission Area Plan, west of Potrero Avenue; and the East SoMa Area Plan, north of Mission Bay. Rezoning under the Eastern Neighborhoods Plan would increase the potential for residential development on infill sites in the eastern neighborhoods over what would have been available under the previous zoning by between approximately 7,400 and 9,900 units. Rezoning would also increase nonresidential space (excluding production, distribution, repair [PDR] loss) by about 3,200,000 to 6,600,000 gsf and decrease the number of sites that would have been available for PDR growth.
Fourth and King Railyards Study	The Planning Department received funding from the San Francisco County Transportation Authority to produce a technical study of development on the Fourth/King railyards, including explorations of the potential physical and economic feasibility for such development as well as revenue potential to help fund rail infrastructure, such as the Caltrain extension to downtown. Total mixed-use development for this project could be between approximately 3.5 and 3.6 million gsf.
Mission Bay Plan	The 303-acre Mission Bay Redevelopment Plan area is adjacent to and south of the project site. The plan was adopted in 1998. It envisioned a mixed-use, transit-oriented neighborhood that would include 6,000 housing units, 4.4 million gsf of office/research/commercial space, 500,000 gsf of retail space, public parks, a school, a library, a fire station, and a University of California, San Francisco (UCSF) research campus, generally bounded by Mariposa, Owens, and Illinois Streets and Mission Bay Boulevard South. The Mission Bay UCSF campus within Mission Bay is also the subject of the UCSF Long-Range Development Plan. In 2014, approximately 1 million gsf of new development under the UCSF Long-Range Development Plan was approved in addition to the UCSF development originally approved under the Mission Bay Plan. Much of the Mission Bay Redevelopment Plan area has been built out over the last 17 years since adoption of the plan.

Project/Plan	Description
Mission Bay Block 3E	As part of the original Mission Bay Plan, the Office of Community Investment and Infrastructure (OCII), with the Chinatown Community Development Center, is proposing to develop Block 3E with 97 affordable rental units. Construction is expected to begin in Quarter 2 of 2017 and end in Quarter 2 of 2019.
Mission Bay Blocks 4E, 6E, 6W, 9, and 9A	As part of the original Mission Bay Plan, OCII is proposing to develop the following: • Block 4E with 100 affordable rental units for seniors, with construction anticipated to begin in Quarter 1 of 2019 and continue through Quarter 4 of 2020. • Blocks 6E and 6W with 233 affordable rental units for families. Construction of Block 6E is anticipated to begin in Quarter 4 of 2016 and continue through Quarter 4 of 2017. Construction of Block 6W is anticipated to begin in Quarter 4 of 2018 and continue through Quarter 3 of 2020. • Blocks 9 and 9A with 150 affordable units for sale, with construction anticipated to begin in Quarter 4 of 2020 and continue through Quarter 4 of 2022.
Mission Bay Blocks 26 and 27	As part of the original Mission Bay Plan, Alexandria Real Estate is in the process of developing approximately 420,000 gsf of office headquarters for Uber. The space would include ground-floor retail and child care. Construction began in Quarter 3 of 2016 and is anticipated to be complete by Quarter 1 of 2019.
Golden State Warriors Event Center and Mixed-Use Development at Mission Bay	Also being developed within the scope of the Mission Bay Plan, the Golden State Warriors basketball team proposes to develop an event center to host NBA season games and provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences, and conventions as well as office and retail uses. Construction is anticipated to begin in Quarter 1 of 2017 and continue through Quarter 3 of 2019.
Pier 70 Mixed-Use District Project	The Pier 70 Mixed-Use District Project would rezone the entire 35-acre project site and establish land use controls for the project site through adoption of a Special Use District (SUD), with incorporation of design standards and guidelines in a proposed Pier 70 Design for Development document. The proposed project would include the rehabilitation and adaptive reuse of three of the 12 onsite contributing resources in the Union Iron Works Historic District and retention of the majority of one onsite contributing resource (Irish Hill). The proposed project would include demolition of the eight remaining onsite contributing resources and partial demolition of the single noncontributing structure on the site, Slipways 5 through 8, which are currently covered by fill and asphalt. The proposed project would involve a flexible land use program under which certain parcels on the project site could be designated for either commercial/office or residential uses. If the proposed project were to be built with the maximum amount of commercial space, less space would be developed with residential uses; conversely, if the maximum number of residential units were constructed, less space would be developed with commercial uses, as described below. Depending on the uses developed, the proposed project's total gross square footage would be between a maximum of 4,212,230 gsf, under the High Residential Assumption, to 4,179,300 gsf, under the High Commercial Assumption, excluding square footage associated with accessory and structured parking. New buildings would range in height from 50 to 90 feet, consistent with Proposition F, which was passed by San Francisco voters in November 2014.

Project/Plan	Description
Crane Cove Park	The proposed Crane Cove Park project would involve 1) construction of a new, approximately 9.8-acre shoreline park (Crane Cove Park); 2) an extension of 19th Street for park access and circulation; 3) creation of Georgia Street, which would connect 20th Street to the 19th Street extension; 4) relocation of the BAE Shipyard entrance from 20th Street to the terminus of the 19th Street extension and rerouting of BAE Shipyard truck traffic from 20th Street to the 19th Street extension; and 5) street improvements along the eastern side of Illinois Street. The proposed project would involve the creation of a new park, including the following: a new sandy shoreline edge to allow access to San Francisco Bay for human-powered boats (e.g., kayaks and canoes) and swimmers; ancillary park uses, such as café uses; multi-purpose lawn areas; a children's play area; shoreline paths; pile-supported look-out piers; site furnishings; and site interpretation elements. Phase 1 of construction, under way fall 2016, is anticipated to be completed in January 2018. Phase 2 is estimated to occur between 2026 and 2028.
Central SoMa Plan	The San Francisco Planning Department is in the process of developing an integrated community vision for the southern portion of the central subway rail corridor. This area is located generally between Townsend and Market Streets, along Fourth Street, and between Second and Sixth Streets. The plan's goal is to integrate transportation and land uses by implementing changes to the allowed land uses and building heights. The plan also includes a strategy for improving the pedestrian experience in this area. These changes will be based on a synthesis of community input, past and current land use efforts, and analysis of long-range regional, citywide, and neighborhood needs. This plan is funded by a transportation planning grant from the California Department of Transportation.

Source: San Francisco Planning Department, 2017.

IMPACTS REQUIRING NO FURTHER ANALYSIS

It was determined that the environmental topics listed below would not require further analysis, because the proposed project would have no effect on the resources.

AGRICULTURAL AND FORESTRY RESOURCES

The California Department of Conservation designates the project site as "Urban and Built-Up Land," and no portion of the project site is considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[3] In addition, the project site is not zoned for agricultural use and is not under a Williamson Act contract. The project site is not zoned as timberland or forestland, and no forestry resources are found on the site. Because there are no agricultural or forestland resources on the project site, no agricultural or forestlands would be converted to non-agricultural or nonforest uses, and no impact would occur.

[3] California Department of Conservation. 2010. *Farmland Mapping and Monitoring Program*. San Francisco Bay Area Important Farmland 2010. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/regional/2010/bay_area_fmmp2010.pdf. Accessed: October 7, 2015.

MINERAL RESOURCES

According to the Environmental Protection Element of the San Francisco General Plan, mineral resources are not found in San Francisco to any appreciable extent.[4] The project site does not contain known mineral resources and does not serve as a mining reserve. Consequently, implementation of the proposed project would not result in the loss of availability of mineral resources that are important to local, regional, or state residents, and no impact would occur. (Energy resources are discussed in the Utilities and Service Systems section.)

[4] City and County of San Francisco. 2004. *General Plan: Environmental Protection Element.* Available: http://www.sf-planning.org/ftp/General_Plan/I6_Environmental_Protection.htm#ENV_CON. Accessed: October 7, 2015.

4.A LAND USE AND LAND USE PLANNING

This section describes the applicable regulatory and environmental setting for land use, existing and proposed land uses within and around the site for the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project), the project's physical impacts on land uses, the project's consistency with key regulatory requirements, and the potential for land use incompatibilities to result from project development. The proposed project's regulatory consistency relative to specific physical effects on the environment, such as air quality, noise, and transportation, is discussed in detail in each appropriate environmental topic section, such as Section 4.G, *Air Quality*; Section 4.F, *Noise*; and Section 4.E, *Transportation and Traffic*, of this Draft Environmental Impact Report (Draft EIR).

The City of San Francisco (City) received nine written comments and one verbal comment on the topic of land use in response to the notice of preparation (NOP). The comments requested that the EIR analyze the following issues: the scale of the proposed project and its consistency with the Mission Bay Redevelopment Plans and the San Francisco Waterfront Plan, the height of the proposed project, future use of Parcel P20, and consistency with Mission Bay development guidelines.

ENVIRONMENTAL SETTING

The project site occupies approximately 28 acres adjacent to San Francisco's Mission Bay neighborhood and the Mission Bay Redevelopment Plan area. It is surrounded by China Basin and AT&T Park to the north, San Francisco Bay (Bay) to the east, Pier 50 to the south and east, and Mission Bay to the south and west. Figure 2-2, on page 2-8, depicts land uses on the project site; Figure 2-3, on page 2-12, illustrates existing land uses and the development status for parcels adjacent to the project site.

PROJECT SITE

The project site consists of Block 8719/Lot 002, Block 8719/Lot 006, and Block 9900/Lot 048. This includes the 14.2-acre Seawall Lot 337; the 0.3-acre strip of land on the south side of Seawall Lot 337, referred to as Parcel P20[1]; the 6.0-acre Pier 48; the 2.2-acre China Basin Park; and 5.4 acres of

[1] The project sponsor's proposal includes Parcel P20 as part of the project site. Parcel P20, along the southern edge of Seawall Lot 337, is owned by the Port and is part of the Mission Bay South Redevelopment Plan area and subject to the jurisdiction of the Office of Community Investment and Infrastructure as the Successor Agency to the San Francisco Redevelopment Agency. Local approvals are necessary for the project to include Parcel P20 as part of the project site. Except where indicated otherwise, references in this document to Seawall Lot 337 include Parcel P20. As part of the project, Parcel P20 would be merged into Seawall Lot 337.

streets and access areas within or adjacent to the boundaries of Seawall Lot 337 and Pier 48. The existing land uses associated with these different components of the project site are discussed further below.

Seawall Lot 337. As shown in Figure 2-3, on page 2-12, Seawall Lot 337 is a roughly rectangular, approximately 14.2-acre parcel, bounded by Terry A. Francois Boulevard to the north, Terry A. Francois Boulevard and Piers 48 and 50 to the east, Parcel P20 and Mission Rock Street to the south, and Third Street to the west. Except for two small, portable pay station kiosks and a billboard, Seawall Lot 337 does not currently contain any permanent structures; it functions mainly as an approximately 2,170-space surface parking lot and an area for pop-up retail (as discussed below). The lot provides space and parking for special events (up to 50 days per year); additional temporary structures are erected periodically to accommodate those events. The existing surface lot provides parking for patrons of AT&T Park as well as parking for approximately 500 daytime commuters (primarily people who work in nearby commercial buildings). In addition, Seawall Lot 337 currently includes a temporary installation called The Yard at Mission Rock. The Yard, which is open year-round from 7:00 a.m. to 10:00 p.m., is made out of 16 recycled shipping containers. It hosts food vendors, public gatherings, and programming opportunities for the community.

Parcel P20. The project site includes a 0.3-acre (14,000-square-foot), approximately 20-foot-wide strip of land adjacent to the south side of Seawall Lot 337, along the north side of Mission Rock Street. This area, referred to as Parcel P20, is within the Mission Bay South Redevelopment Plan area as well as the Mission Bay Open Space (MB-OS) Use District and the Mission Rock Height and Bulk District. Under the Mission Bay South Redevelopment Plan, the parcel was originally intended to be a thin landscape buffer between the residential uses that were to be built on the south side of Mission Rock Street and the industrial uses at Seawall Lot 337. No such buffer has been or will be necessary because, since that time, Seawall Lot 337 and Parcel P20 have been used for parking and special-event uses; they are now proposed for residential, commercial, and open space uses.

Pier 48. Pier 48 is a pile-supported facility, approximately 6 acres (261,000 square feet) in size, bounded by San Francisco Bay to the north, east, and south and Terry A. Francois Boulevard to the west. About 181,200 gross square feet (gsf) of Pier 48 consists of enclosed warehouse space, including two one-story main sheds (Shed A and Shed B), which are connected by a one-story connector shed (Shed C) at the east end of the pier. Between Shed A and Shed B is an approximately 33,800-square-foot uncovered "valley," or open-to-sky space. Currently, Shed A and Shed C are used for parking during AT&T Park events and special events. Shed B has been leased by the Department of Elections for storing voting machines, but that tenant could vacate in early 2017. The eastern apron of Pier 48 is currently part of the premises the Port leases to Cross Link, Inc. (dba Westar Marine Services [Westar]), a barge, water taxi, and tug operator. The southern berth of Pier 48 is occupied by tugs and maintenance facilities for ferry boats. The

northern apron is red-tagged,[2] vacant, and not actively used for any purpose. Public access has never been available to the northern (20,300-square-foot), southern (21,000-square-foot), or eastern (4,700-square-foot) aprons because they are in varying states of disrepair or encumbered by existing maritime industrial uses that are incompatible with unrestricted public access.

China Basin Park. Approximately 2.2 acres of the northern portion of the project site are improved as China Basin Park and perimeter walkways. China Basin Park was constructed following the opening of AT&T Park and opened to the public in 2001. The park includes a lawn with a single row of 26 trees and a paved bicycle/pedestrian pathway. The park features views of the Bay and its surroundings. It contains viewing areas, benches, picnic areas, lighting, a small baseball diamond, a statue of former Giants player Willie McCovey, and historic markers that represent Giants teams from 1958 through 1999.

Existing Streets and Access Areas. The project site includes approximately 3.5 acres of Terry A. Francois Boulevard. This street curves around Seawall Lot 337, from Third Street to the northwest to Mission Rock Street to the southeast. The approximately 1.4-acre Pier 48 and Pier 50 access areas are located directly west and south of Pier 48. To the south, between Piers 48 and 50 and east of Terry A. Francois Boulevard, is an approximately 0.50-acre marginal wharf (see Figure 2-2, on page 2-8).

ADJACENT USES

The project site is surrounded by China Basin and AT&T Park to the north, the Bay to the east, Pier 50 to the south and east, and Mission Bay to the south and west. Existing land uses in these areas consist of a mixture of medium-density mixed-use developments, constructed from the late 1990s to the present; areas that are presently under development and in various stages of completion; and vacant parcels that temporarily serve as either surface parking lots or construction staging areas. These adjacent areas are depicted in Figure 2-3, on page 2-12, and described in more detail below.

China Basin and Mission Creek. China Basin is directly north of China Basin Park where the mouth of Mission Creek meets the Bay. Mission Creek was once a waterway that extended from the Mission neighborhood to the Bay but is now channelized, going west from China Basin to approximately Interstate 280 (I-280) and undergrounded west of I-280. Mission Creek Park (being developed as part of the Mission Bay project) lines the creek on the north and south and includes open grassy areas, pathways, a small amphitheater, overlook areas, a nonmotorized boat launch, sports courts, and a dog play area.

[2] Structures that have been red-tagged are severely damaged, to the degree that the structures are too dangerous to occupy.

AT&T Park. North of the project site, across China Basin, is AT&T Park, home of the San Francisco Giants major league baseball team. Located at 24 Willie Mays Plaza, the ballpark opened in April 2000 and has a seating capacity of 41,503. The regular major league baseball season runs from early April to late September, followed by the postseason in October and early November. AT&T Park attracts an average of 3.5 million visitors to the neighborhood annually. Visitors attend baseball games or other events and patronize the local restaurants, retail stores, and bars. In addition to two to five preseason games and up to 12 postseason games, there are approximately 81 regular-season home games per year, of which approximately 27 are held during the day (a maximum of 13 mid-week day games) and approximately 54 are held in the evening. AT&T Park hosts approximately 145 nonbaseball-related special events per year, including a limited number of concerts, charity and private events, and other sporting events, attended by a total of approximately 170,000 visitors annually.

Pier 50. Pier 50, an active maritime industrial pier, is located east and south of Seawall Lot 337 and south of Pier 48. Pier 50 houses the Port's primary maintenance facility (in Shed D), which supports Port maintenance activities along the waterfront. Pier 50's three other warehouse sheds (Sheds A, B, and C) accommodate industrial maritime support, harbor service operations, and Bauer vans. Pier 50 provides a ready-reserve berthing facility for the U.S. Department of Transportation Marine Administration (MARAD), which provides transport for military troop deployments and national emergencies as part of the National Defense Reserve Fleet. Towing and tugboat services, operated by Westar, are based out of Shed C on Pier 50, with storage areas for equipment and vessels at the south apron of Pier 48. There are numerous smaller, interim tenants at Pier 50, which typically use the Pier for storage and parking uses. A restaurant is located in a building, approximately 3,400 gsf, on Channel Wharf near Pier 50.

Mission Bay. Mission Bay, which covers approximately 303 acres[3] of land between the Bay and I-280, is a mixed-use, transit-oriented area. This neighborhood is roughly bounded by Townsend Street to the north, Third Street (adjacent to the project site) and Terry A. Francois Boulevard to the east (south of the project site), Mariposa Street to the south, and Seventh Street to the west.

The fully entitled, and under construction, development program includes approximately 6,400 housing units, 3.4 million gsf of office/life science/biotechnology space; a University of California, San Francisco (UCSF) research campus, containing 3.15 million gsf of building space; a 550-bed UCSF Medical Center (not included in the UCSF research campus); 285,000 gsf of retail space; a 250-room hotel with 350 housing units; 49 acres of public open space; and new public facilities, including a 280,000 gsf public safety building, a 7,500 gsf public library, and a 500-student public school. Included within the development program and under construction is

[3] The 0.3-acre Parcel P20 strip of land that is part of the proposed project site and within the Mission Bay South Redevelopment Plan area is included within these 303 acres.

an arena/event center that would host the Golden State Warriors basketball team during the NBA season and provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences and conventions; the development would also include office, retail and parking facilities. Upon full implementation of the Mission Bay North and South Redevelopment Plans, more than 11,000 residents and 30,000 permanent jobs will have been added to the Mission Bay area, with full development contemplated within the next 10 years, depending on market conditions.[4]

The largest development by a single property owner at Mission Bay is the UCSF research campus and hospital complex. As of February 2015, UCSF has built approximately 398,000 gsf of lab/education space, 407,000 gsf of lab/research space, 155,000 gsf of educational/social/recreational space, 385,000 gsf of research/education space, 763,000 gsf of faculty office/support space, 290 hospital beds, and 430 housing units.[5] In addition, the UCSF campus is anticipated to include a full-size sports field, a permanent child care facility, and neighborhood-serving retail space.

Portions of Mission Bay that have already been developed are included in the environmental baseline for this Draft EIR analysis, while other portions that are not yet developed or under construction are assumed to be part of the future cumulative condition. Additionally, although the Warriors Event Center and associated office and retail buildings and parking facilities are currently under construction, at the time the NOP for this Draft EIR was issued, that project had not yet been approved and, until recently, its construction remained uncertain due to litigation that was recently resolved. Therefore, the Warriors Event Center and associated office and retail and parking facilities have been assumed in the future cumulative condition rather than in the environmental baseline. Refer to Chapter 4, *Environmental Setting and Impacts*, for further discussion.

REGULATORY FRAMEWORK

As described below, the main local documents that guide planning and land use within and around the project site are the San Francisco General Plan (General Plan), the Port's Waterfront Land Use Plan (WLUP), and the San Francisco Planning Code. In addition to the brief description below, these and other applicable planning documents are summarized and discussed in greater detail in Chapter 3, *Plans and Policies*.

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[4] Mission Bay Development Group. n.d. *Mission Bay*. Available: http://www.mbaydevelopment.com/#!mission-bay-new/cba2. Accessed: March 24, 2015.

[5] Mission Bay Development Group. n.d. *Current Development Map*. Available: http://www.mbaydevelopment.com/#!mission-bay-new/cba2. Accessed: March 24, 2015.

San Francisco General Plan. The General Plan presents broad objectives and policies that guide land use decisions within the city and represents the vision for the city's physical character. The General Plan is made up of 10 elements: Air Quality, Arts, Commerce and Industry, Community Facilities, Community Safety, Environmental Protection, Housing, Recreation and Open Space, Transportation, and Urban Design. Sixteen area plans provide additional policies for neighborhoods from Bayview/Hunters Point to Chinatown. Together, these elements and the area plans provide a policy framework that guides future development in the city. The proposed project is not located within any of the city's area plans but is in the WLUP, as discussed below.

Within the General Plan, the Urban Design Element addresses the city's physical character and order as well as the relationship between people and their environment. The following Urban Design Element policies are applicable to land use decisions associated with the proposed project's compatibility with its surroundings:

- **Policy 1.1.** Recognize and protect major views in the city, with particular attention to those of open space and water.
- **Policy 1.3.** Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.
- **Policy 1.7.** Recognize the natural boundaries of districts, and promote connections between districts.
- **Policy 2.3.** Avoid encroachments on San Francisco Bay.
- **Policy 2.6.** Respect the character of older development nearby in the design of new buildings.
- **Policy 3.1.** Promote harmony in the visual relationships and transitions between new and older buildings.
- **Policy 3.4.** Promote building forms that will respect and improve the integrity of open spaces and other public areas.
- **Policy 3.5.** Relate the height of buildings to important attributes of the city pattern.
- **Policy 3.6.** Relate the bulk of buildings to the prevailing scale of development.
- **Policy 3.7.** Recognize the special urban design problems posed in development of large properties.
- **Policy 3.8.** Discourage accumulation and development of large properties, unless such development is carefully designed with respect to its impact upon the surrounding area and upon the city.

Port of San Francisco Waterfront Land Use Plan. The Port of San Francisco WLUP applies goals and policies to guide the development and revitalization of the city's 7.5-mile-long waterfront area within the jurisdiction of the San Francisco Port Commission. The Port Commission formed the two-member Seawall Lot 337 Commission Committee in 2006 to lead a public planning process and define opportunities for development of Seawall Lot 337. The Commission Committee chaired a series of public meetings from January through July 2007, through which the Port developed extensive development objectives and criteria specific to Seawall Lot 337 and Pier 48 as well as a suggested approach to the Port's developer solicitation process. On a parallel track, the legislature approved Senate Bill 815 in 2007, which authorized the Port to enter into 75-year leases for nontrust uses on specified seawall lots, including Seawall Lot 337, under specified conditions, including State Lands Commission concurrence. The 75-year limitation for such leases was modified by Assembly Bill (AB) 2797 to be the later of either 2094 or 75 years after the certificate of occupancy for the particular leased site or development parcel.

San Francisco Planning Code. The San Francisco Planning Code (Planning Code) incorporates the city's zoning maps, codifies the land uses allowed within the city, and provides an additional level of land use regulation through its zoning Use Districts and Height and Bulk Districts. The Planning Code governs the permitted uses, densities, and configurations of buildings within and around the project site. The applicable Use Districts and Height and Bulk District for the project site and surrounding areas are discussed below and shown in Figure 4.A-1, on the following page, and Figure 4.A-2, page 4.A-9.

PROJECT SITE

Seawall Lot 337. Seawall Lot 337, part of the project site, is in the MB-OS Use District, which was created in 1991 as part of an earlier Mission Bay development plan. The subsequent Mission Bay South Redevelopment Plan, approved in 1998, did not include Seawall Lot 337 (except for Parcel P20), and the zoning classification remained unchanged. The Mission Rock Height and Bulk District approved by the voters in November 2015 authorized changes to the height and bulk of the site.[6] Seawall Lot 337 is also public trust land and covered by special state

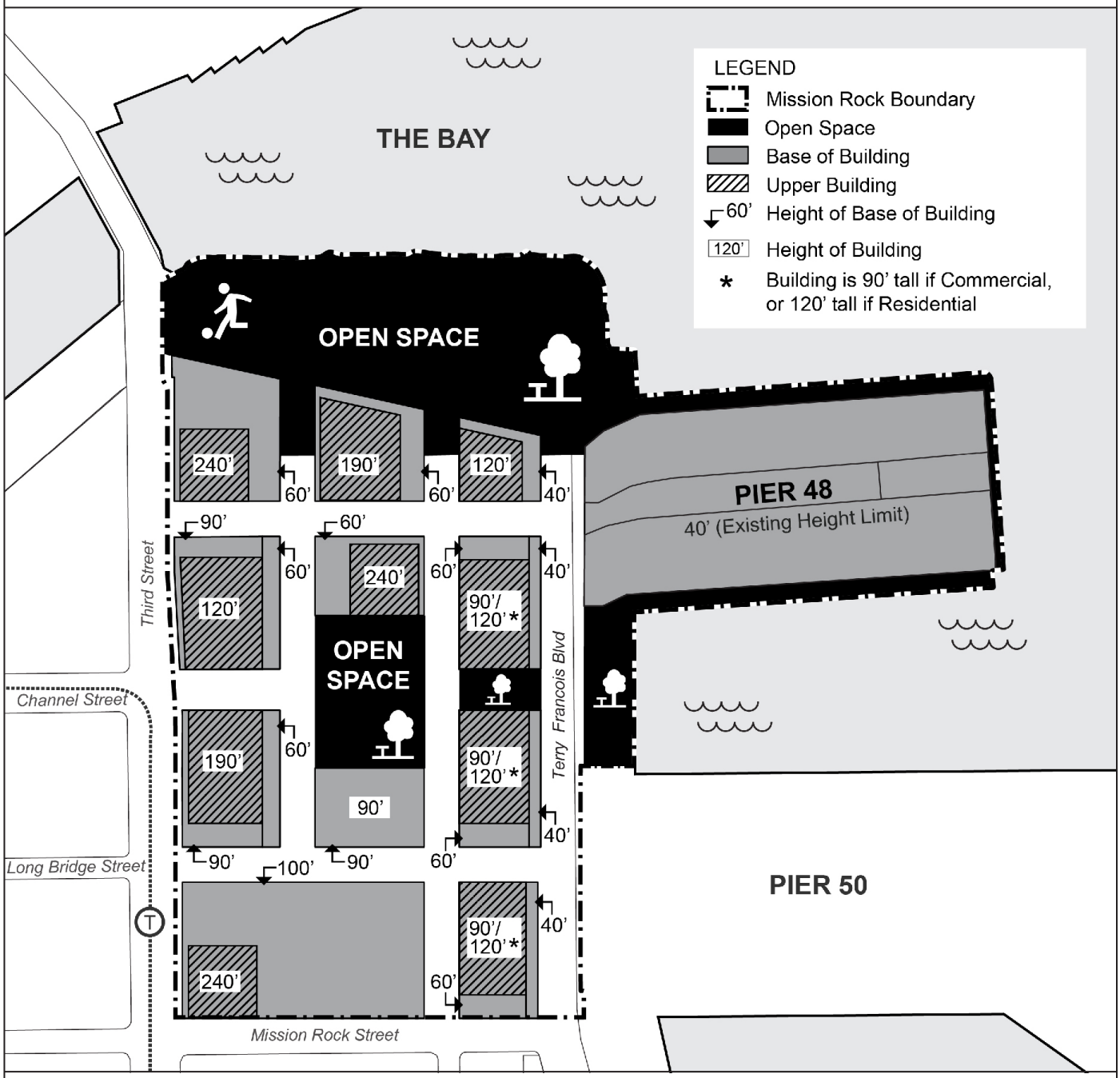
[6] As described in Chapter 2, *Project Description*, Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative, which was approved by San Francisco voters on November 3, 2015, amended the height and bulk restrictions for the project site by establishing the Mission Rock Height and Bulk District.



Graphics ... 00836.13 (4-14-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.A-1
Zoning Use District Map



Source: Proposition D, the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative (November 3, 2015)

Graphics ... 00836.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.A-2
Height and Bulk Districts at Project Site

legislation (Senate Bill [SB] 815) that allows nontrust uses under specified circumstances.[7] The eastern edge of Seawall Lot 337 is designated as backland support space[8] for Piers 48 and 50 in the WLUP.

The port priority use designation for this eastern portion of Seawall Lot 337 is incorporated into the Bay Conservation and Development Commission's (BCDC's) San Francisco Waterfront Special Area Plan and the Port's WLUP, discussed further in Chapter 3, *Plans and Policies*, page 3-4.

Parcel P20. Parcel P20, part of the project site, is in the MB-OS Use District and Mission Rock Height and Bulk District. Parcel P20 is subject to the public trust but, unlike Seawall Lot 337, not covered by SB 815.9 The Port Commission approved the inclusion of Parcel P20 in the project site, subject to necessary approvals by the Board of Supervisors and the San Francisco Office of Community Investment and Infrastructure (successor agency to the former San Francisco Redevelopment Agency) with respect to the redevelopment plan and zoning changes and the State Lands Commission and the state legislature with respect to its use for nontrust uses under SB 815 or similar successor legislation. AB 2797, approved by the governor on September 23, 2016, authorizes the San Francisco Office of Community Investment and Infrastructure to amend the Mission Bay South Redevelopment Plan to remove Parcel P20 from the Mission Bay South Redevelopment Plan area and redefines the boundaries of Seawall Lot 337 to extend to the edge of China Basin Park, as expanded, to the north, realigned Terry A. Francois Boulevard to the east, and Mission Rock Street to the south.

Pier 48. Pier 48 is within a Heavy Industrial (M-2) Use District and the Mission Rock Height and Bulk District. In addition, Pier 48 is the southernmost pier structure within the Port of San Francisco Embarcadero National Register Historic District (Embarcadero Historic District), which is listed in the National Register of Historic Places (National Register). The Embarcadero Historic District encompasses an approximately 3-mile stretch of the city's northeastern waterfront, from Pier 45 in the north to Pier 48 in the south.[10] Pier 48 is identified as a contributory resource to The Embarcadero Historic District but is not individually listed as a

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7 Public trust lands are held on behalf of the people of the state for purposes of commerce, navigation, and fishery operations. In addition, the Burton Act (stats. 1967, ch. 1333), under which the State of California transferred San Francisco Harbor to the City and its port, imposes statutory trust obligations on the port. SB 815, approved in 2007 and amended by Assembly Bill 2797 (stats. 2016) in 2016, authorizes the State Lands Commission to lift public trust use restrictions from designated Port seawall lots, including Seawall Lot 337, for leases with terms of up to 75 years, or until December 31, 2105, upon making certain findings, as specified in SB 815.

8 Backland support space includes areas intended for storing materials used to load and unload vessels.

9 SB 815 suspends application of public trust use restrictions for certain seawall lots, including Seawall Lot 337.AB 2797 authorizes actions necessary to add portions of Parcel P20 to Seawall Lot 337.

10 The pier numbering convention used by the Port assigns odd numbers to facilities north of the Ferry Building and even numbers to facilities south of the Ferry Building.

historic structure. The Embarcadero Historic District is discussed further in Section 4.D, *Cultural Resources*. In addition, the Seaport Plan designates Pier 48 as a port priority use area and as a future site for neo-bulk cargo shipping and break bulk cargo storage. Pier 48 has not been used for neo-bulk cargo operations at any time since the Seaport Plan was adopted in 2006, nor does the Port foresee any future demand for cargo use there because capacity at the Port's break bulk facility at Pier 80 exceeds demand. The Port began a community planning process for development of Seawall Lot 337 and Pier 48 in 2006. It identified the need to seek removal of the port priority use designation to permit mixed uses at the site. AB 2797, effective January 1, 2017, removed the port priority use designation from Pier 48 and the eastern 6 acres of Seawall Lot 337 (i.e., the portion of Seawall Lot 337 that previously had been subject to the port priority use designation).

China Basin Park. China Basin Park is designated as other public access and open space in the Port's WLUP. The park is within an MB-OS Use District and the Mission Rock Height and Bulk District.

ADJACENT USES

AT&T Park. The San Francisco Giants' baseball park, located immediately north of China Basin, is located in an M-2 Use District[11] and a 150-X Height and Bulk District.[12]

Pier 50. Pier 50, an adjacent area east and south of Seawall Lot 337, is located in an M-2 Use District and a 40-X Height and Bulk District.

Mission Bay. Mission Bay, an adjacent area south and west of the project site, is in a Mission Bay Redevelopment Area (MB-RA) Use District and an MB-RA Height and Bulk District.[13] As shown in Figure 4.A-3, on the following page, the blocks adjoining the project site are identified in the Mission Bay South Redevelopment Plan as Blocks 1, 2, and 3 on the west (across Third Street); Block 4 on the southwest; and Blocks 8, 9, 9a, and P19 on the south (across Mission Rock Street). Within the context of the Mission Bay South Redevelopment Plan, Block 1 is in the Hotel Use District (intended for mixed uses, including retail); Blocks 2, 3, 4, 9, and 9a are in the Mission Bay Residential Use District (intended for mixed uses, including neighborhood-serving retail); Block 8 is in the Public Facilities Use District (intended for school, police, fire, and rail uses); and Block P19 is in the Open Space Use District. Block 1 is within Mission Bay South Design Guidelines Height Zone (HZ) 2, Blocks 2 through 4 are within HZ-3,

[11] Under Proposition B, passed in March 1996, the M-2 zoning designation applies to ballpark uses but with provisions of Planning Code Section 249.18 incorporated under a conditional use authorization.

[12] A 150-X Height and Bulk District allows height exceptions above the 150-foot base to be approved in accordance with the conditional use procedures.

[13] A MB-RA Height and Bulk District is governed by the Mission Bay North and Mission Bay South Redevelopment Plans, which include a range of heights by block.



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Figure 4.A-3
Mission Bay Redevelopment Area

and Blocks 8, 9, and 9a are within HZ-4. All three of these height zones, HZ-2 through HZ-4, are characterized as areas with residential/hotel uses; buildings in these zones are limited to heights that range from 65 to 160 feet, exclusive of rooftop mechanical equipment. Block 9a has an additional height restriction, limiting buildings to a maximum of 90 feet.

ENVIRONMENTAL IMPACTS

This section describes the impact analysis related to land use and land use planning for the proposed project. It describes the methods used to determine the impacts of the proposed project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

SIGNIFICANCE CRITERIA

The proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

METHODS FOR ANALYSIS

This section discusses whether the proposed project would conflict with the applicable land use policies of the City and the regional plans listed above adopted for purpose of avoiding or mitigating an environmental effect. It also evaluates whether the proposed project would physically divide an established community. A conflict between a proposed project and applicable land use plans, policies, and regulations of an agency with jurisdiction over the project does not necessarily indicate a significant effect on the environment under the California Environmental Quality Act (CEQA). Consequently, the analysis here focuses on inconsistencies with policies adopted for the purpose of avoiding environmental impacts. The City's Planning Commission and/or Board of Supervisors will ultimately determine the proposed project's overall consistency on balance with the goals and policies contained in the General Plan and other City requirements and planning documents as part of the decision to approve or reject the proposed project.

If the proposed project would conflict with a plan or policy adopted to address issues associated with a particular resource area, such as biological, air quality, or water quality resources, any impacts associated with those conflicts are analyzed in the applicable resource sections of this Draft EIR and summarized here. Chapter 3, *Plans and Policies*, provides a discussion of the proposed project's potential conflicts with applicable plans and policies generally.

LAND USE ASSUMPTIONS

This analysis considers the potential range of development that could occur under the High Commercial Assumption as well as the High Residential Assumption. As discussed in the Project Description, the two project assumptions would involve similar land uses (with varying amounts of commercial or residential uses under each assumption due to the flexible zoning for Blocks H, I, and J), as well as similar total square footages and building heights (with the exception of building heights on Blocks H, I, and J), within the project site. The two land use assumptions are therefore analyzed as one, except where the differences between the assumptions would result in a different conclusion with respect to potential impacts on the environment that could result from inconsistencies with applicable land use plans.

IMPACTS AND MITIGATION MEASURES

Impact LU-1. The proposed project would not physically divide an established community. (Less than Significant)

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and surrounding areas. Physical divisions within a community could also result from large-scale land use changes; for instance, those that have the potential to isolate its residential uses from other nearby residential neighborhoods.

The project site is adjacent to an evolving mixed-use community, the Mission Bay South Redevelopment Plan area, which includes residential, commercial, and hotel uses. As described above under the *Mission Bay* heading on page 4.A-4, the fully entitled development program for Mission Bay is either constructed or under construction, including approximately 6,400 housing units, 3.4 million gsf of office/life science/biotechnology space, an arena for the Golden State Warriors, a 3.15 million gsf UCSF research campus, a 550-bed medical center, 285,000 gsf of retail space, a 250-room hotel with 350 housing units, 49 acres of public open space, and new public facilities, including a 280,000 gsf public safety building, a 7,500 gsf public library, and a 500-student public school. Full development of Mission Bay is contemplated within the next 10 years, depending on market conditions.[14]

[14] Mission Bay Development Group. n.d. *Mission Bay*. Available: http://www.mbaydevelopment.com/#!mission-bay-new/cba2. Accessed: March 24, 2015.

The proposed project does not include any large-scale infrastructure features such as new freeways or high-volume roadways that would physically divide an established community, nor would it remove transportation infrastructure that links neighborhoods. Instead, the proposed project would replace a surface parking lot with a mixed-use development, including a new internal street grid that would be aligned with surrounding streets (e.g., Third Street, Mission Rock Street, Terry A. Francois Boulevard). The proposed project would provide pedestrian and vehicular connectivity between the internal areas of the project site, Terry A. Francois Boulevard, and the existing and developing neighborhoods that surround the project site on the north, west, and south. The proposed project would therefore not divide, remove a means of access, or impair mobility within an existing community or between a community and surrounding areas.

Although the replacement of existing surface parking with mixed-use development would increase building development intensity on the project site, new buildings would not isolate areas or constitute a barrier to access because the majority of the project site presently serves as a parking facility rather than access between adjoining areas. Existing pedestrian access via China Basin Park along the northern edge of the project site would be retained and expanded to include a larger area, as well as provide access to the currently inaccessible Pier 48 aprons, and connect the City's northern waterfront open space network via the planned Blue Greenway to the existing or planned central waterfront open space networks of Mission Bay, Pier 70, Hunter's Point, and Candlestick Point to the south. The proposed project would therefore improve connectivity between the project site and surrounding neighborhoods and would not divide an established community. Based on the above, this would be a less-than-significant impact.

Section 4.E, *Transportation and Circulation*, provides a detailed analysis of potential impacts associated with the proposed project's alteration of pedestrian and vehicular circulation.

Impact LU-2. The proposed project would not conflict with 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. (Less than Significant)

Applicable local land use plans that regulate development on the project site include the General Plan, the WLUP, the Mission Bay South Redevelopment Plan, and the San Francisco Planning Code. Applicable regional plans include the BCDC Bay Plan and San Francisco Waterfront Special Area Plan and the San Francisco Bay Area Seaport Plan. Other applicable plans include the Bicycle Plan, Transit First Policy, Better Streets Plan, Accountable Planning Initiative, and Plan Bay Area. The discussion in Chapter 3, *Plans and Policies*, generally describes the proposed project's consistencies and inconsistencies with these plans. The local land use plan analyses are summarized here; please refer to Chapter 3, *Plans and Policies*, for the regional plan analyses. The proposed project would not conflict with the General Plan, Transit First

Policy, Bicycle Plan, BCDC Bay Plan and San Francisco Waterfront Special Area Plan, San Francisco Bay Area Seaport Plan, Better Streets Plan, Accountable Planning Initiative, or Plan Bay Area. Thus, no environmental impacts would result.

PLANNING CODE

The proposed project would be inconsistent with allowable uses under the Planning Code at Seawall Lot 337, Parcel P20, and China Basin Park but consistent with the height and bulk limits. The proposed project would be consistent with allowable uses under the Planning Code at Pier 48. Seawall Lot 337, Parcel P20, and China Basin Park are within the MB-OS Use District. Only recreational uses and uses that are incidental to and supportive of recreational use are permitted in the district, including limited structures for or incidental to and supportive of use of the area for active and passive recreation. Pier 48 is within the Heavy Industrial (M-2) Use District, which is generally separated from residential and commercial areas. The M-2 zone allows heavy industrial uses, but some uses are permitted only as a conditional use or at some distance from residential districts. At Seawall Lot 337 and Parcel P20, the project proposes a mix of land uses depending on market conditions, including market-rate and affordable residential uses, commercial uses, active/retail/production uses, and parking uses, which are inconsistent with the Planning Code. At Pier 48, the proposed project would repurpose the existing Pier 48 sheds and valley to accommodate a range of uses, including industrial, associated general office and storage, retail, restaurant, tour and exhibition space, and event-related uses, which would be consistent with the Planning Code.

The entire project site falls within the Mission Rock Height and Bulk District, included as Section 291 of the Planning Code. Section 291 was added to the Planning Code with the passage of Proposition D on November 3, 2015. Section 291 establishes height and bulk limits for the Mission Rock Height and Bulk District and requires the adoption of design controls for the district to guide the design of improvements within established height limits.

The existing MB-OS use designation at Seawall Lot 337, Parcel P20, and China Basin Park was made in connection with an earlier Mission Bay project plan that was superseded by the current Mission Bay plan that is being built out. This remnant designation is from an earlier and no longer existing plan, as acknowledged by Proposition D. The current uses, an open parking lot and 2.2 acre China Basin Park, would be replaced with new uses as described in Chapter 2, *Project Description*. Under the proposed project, Seawall Lot 337, Parcel P20 and China Basin Park would be used for a mixed-use commercial and residential project that includes open space and a parking garage. Taking into account improvements to Pier 48, the project would include approximately 8.0 acres of new and expanded open spaces including China Basin Park, Mission Rock Square, Channel Wharf, Channel Lane, a waterfront promenade, pedestrian paseos, and new public access on the apron of Pier 48. The parks would be connected to a new pedestrian-oriented street network, including the pedestrian-

privileged Shared Public Way, which would connect China Basin Park to Long Bridge Street and areas south of the project site. These areas would also provide access to the City's proposed Blue Greenway.

As stated in Chapter 2, *Project Description*, on page 2-64, the project sponsor would seek approval to rezone the project site through a Special Use District (SUD) or similar zoning mechanism and amend the Planning Code and Zoning Map. If approved by the Port Commission, the Planning Commission, and the San Francisco Board of Supervisors, the SUD would include flexible zoning controls that would permit certain blocks (Blocks H, I, and J) on the east side of the project site, adjacent to the west side of Terry A. Francois Boulevard, to be developed with either commercial or residential uses and the rest of the site to be developed for designated residential or commercial uses, a parking structure, and open space. As described in detail on page 2-64 of Chapter 2, *Project Description*, and illustrated in Figure 2-4, on page 2-21, the new zoning would allow for a mixed-use development that responds to future market conditions; incorporates specific development controls, such as height limits, allowed development densities, bulk limits, and building setbacks on upper floors within Seawall Lot 337; and requires all development on the project site to comply with the Design Controls under a design review process that would be referenced in the Planning Code text amendment.

As discussed in Chapter 3, *Plans and Policies*, the Design Controls for the proposed project would be consistent with the height and bulk restrictions set forth in the recently approved Mission Rock Height and Bulk District in Section 291 of the Planning Code, and would satisfy the requirement set forth in Section 291 to adopt design controls for the Mission Rock Height and Bulk District. Approval of the SUD, which would be required in order for the proposed project to be developed as proposed, would bring the proposed project into compliance with the development regulations for the project site set forth in the Planning Code. This would require a Planning Commission recommendation followed by Board of Supervisors approval of the Planning Code and zoning map amendments, which would include the creation of a new Planning Code section, establishing permitted uses, building forms, and other development controls for the new SUD, and amendment of the zoning map to show the boundaries of the new SUD.

The proposed project would replace a parking lot and 2.2 acres of open space with a mixed use project that includes an expanded amount of open space and would be consistent with proposed revisions to the Planning Code. In addition, with the 8.0 acres of open space that would be provided, as further explained in Section 4.J, *Public Services and Recreation*, the project would not result in significant environmental impacts related to public services and recreation. Thus, the project would not cause a significant environmental impact related to conflicts with a policy adopted for the purpose of avoiding an impact.

PORT OF SAN FRANCISCO WATERFRONT LAND USE PLAN

In the WLUP, the eastern portion of Seawall Lot 337 is identified as an "existing maritime area." Its northern portion is within a "waterfront mixed-use opportunity area," and the frontage along China Basin (China Basin Park) is identified as "open space and public access." The proposed project, which would include commercial, residential, active/retail, production, and open space uses, has been designed to be compatible with the objectives and criteria developed in the Port's public planning process for Seawall Lot 337 and Pier 48. Although the proposed project would be inconsistent with the "existing maritime area" designation in the WLUP for the eastern portion of Seawall Lot 337, the proposed use of the portion of the frontage along China Basin for an expanded China Basin Park would be generally consistent with the "open space and public access" and the project would be consistent with the "waterfront mixed use opportunity area" designation in other areas on the project site. The inconsistency with the "existing maritime area" designation would not constitute a significant environmental impact because this land use designation was not adopted to avoid or mitigate an environmental effect but rather establish land uses that are supportive of activities at adjacent Port property (such as Pier 48 and Pier 50).

As part of the project approval process, the Port would propose amendments to the WLUP to reflect land use designations that are consistent with the proposed project and SUD. The amendment to the WLUP would modify the "existing maritime area" designation at the project site to "Waterfront Mixed-Use Opportunity Area" by amending the WLUP's Map A, Maritime Uses and the South Beach/China Basin Waterfront Subarea Map, to reflect this change as well as amending the uses listed for Seawall Lot 337 and Pier 48 in the WLUP's Acceptable Land Use Table for the South Beach/China Basin area to reflect the uses proposed for the project. The WLUP's Development Standards for Pier 48 would also be amended to reflect standards that are consistent with the proposed rehabilitation and reuse of the pier. The WLUP's Waterfront Design and Access Element would be amended to replace the Design Criteria for Seawall Lot 337 to reflect the mixed uses proposed under the project. These WLUP amendments would require approval by the San Francisco Port Commission.

GENERAL PLAN

The proposed project would be consistent with the General Plan. As discussed in Chapter 3, *Plans and Policies*, the height and bulk restrictions set forth for the project site in Map 4 (Urban Design Guidelines for Height of Buildings) and Map 5 (Urban Design Guidelines for Bulk of Buildings) of the Urban Design Element, respectively, defer to the Mission Rock Height and Bulk District as the design control authority for new land uses on the project site. The proposed project, as designed, is consistent with the design requirements set forth in Section 291 of the Planning Code for the Mission Rock Height and Bulk District. Further, proposed building heights would be consistent with the Urban Design Element Policy 3.5 requirement: "Heights of

buildings should taper down to the shoreline of the Bay and ocean, following the characteristic pattern and preserving topography and views." The proposed project would be consistent with the Urban Design Element. The building heights closest to the Bay on the east side of the proposed project would be shorter (ranging from 90 to 120 feet) than the buildings in the interior or on the west side of the proposed project (ranging from 90 to 240 feet), which are farther away from the Bay.

Overall, the proposed project would also be consistent with the Housing Element, Commerce and Industry Element, and the Transportation Element of the General Plan. The project site would be accessible by all modes of transportation from Third Street, Mission Rock Street, and the reconfigured Terry A. Francois Boulevard. The proposed street network would connect to surrounding Mission Bay streets and introduce additional streets to further break the blocks into walkable distances. Nevertheless, implementation of the proposed project could have minor conflicts with the Transportation Element by providing parking garages that could cause delays for transit. Additionally, bicycle safety and accessibility could be affected at Pier 48, and hazardous conditions or delays for transit, pedestrians, and bicycles could result from the project's loading operations. However, these potential impacts would be reduced through implementation of mitigation measures, thereby reducing the environmental impacts and avoiding a conflict with the Transportation Element. See Section 4.E, *Transportation and Circulation*, for a more detailed discussion of potential impacts on transit, pedestrians, and bicycles as well as a discussion of mitigation measures.

MISSION BAY SOUTH REDEVELOPMENT PLAN

Only Parcel P20 is within the Mission Bay South Redevelopment Plan area. Development on this portion of the project site would conflict with this plan. Parcel P20 is designated as open space in the redevelopment plan, but the proposed project would use Parcel P20 for a new parking structure and residential development on Block D and future development on Block H. However, this would not result in an environmental impact because the removal of Parcel P20 from the open space land use designation would not negatively affect the total amount of open space available for parks and recreation in Mission Bay or the city because Parcel P20 is such a relatively small (0.3-acre) area, and because it was proposed as a landscape buffer (rather than an active use area), that is no longer needed between Mission Rock Street and previously anticipated or existing light industrial uses on Seawall Lot 337, which would instead be developed with the proposed project. In addition, because of the narrow shape and location of Parcel P20 along the edge of the Mission Bay South Redevelopment Plan area, removal of Parcel P20 from the plan area would not conflict with any of the open space policies in the plan.

To alleviate the conflict with the redevelopment plan, an amendment to the Mission Bay South Redevelopment Plan boundaries will be required to remove Parcel P20 from the plan area. AB 2797, approved by the governor on September 23, 2016, streamlined the process for

amending the Mission Bay South Redevelopment Plan area map and related documents. It provides that a plan amendment approved by the successor agency to the Redevelopment Agency (the Commission on Community Investment and Infrastructure) or the Board of Supervisors regarding removal of Parcel P20 from the Mission Bay South Redevelopment Plan area shall not require approval by the State Department of Finance or the controller, as otherwise would have been required under the law that dissolved redevelopment agencies. The amendment for the proposed project would be approved by the Board of Supervisors and the Commission on Community Investment and Infrastructure.

SUMMARY

To approve the proposed project, the City would be required to make findings of project consistency with the Planning Code, WLUP, and Mission Bay South Redevelopment Plan. Amending each of these land use plans to achieve consistency would be a part of the approval and entitlement process for the proposed project. Amendments to each of these land use plans and the Planning Code are part of the proposed project. The proposed project, as approved and developed, would thus be consistent with relevant plans and policies once amended. Overall, the proposed project would have a less-than-significant environmental impact related to land use plans and policies. No mitigation is required.

CUMULATIVE IMPACTS

Impact C-LU-1. The proposed project, in combination with other development within the city, would not physically divide an established community. (Less than Significant)

This analysis of the contribution of the proposed project to cumulative land use impacts is based on consideration of the reasonably foreseeable future projects identified in Table 4-1 in Chapter 4 *Environmental Setting and Impacts*, page 5. The cumulative projects that are closest to the project site and, therefore, have the greatest likelihood of combining with the proposed project in a way that could result in cumulative impacts include the Mission Bay Redevelopment Plan, the Golden State Warriors Project at Mission Bay Blocks 29–32, potential future development of the Fourth and King Street railyards, and the 701 Third Street project. Each of these cumulative projects is described below.

The Mission Bay Redevelopment Plan is a fully entitled and evolving mixed-use community, much of which is either under construction or already developed as residential, commercial, and hotel uses. The Mission Bay South Redevelopment Plan area abuts the project site to the west and south, while the Mission Bay North Redevelopment Plan area is located directly north of the project site, across Mission Creek. The future development program for Mission Bay would be built within the existing street grid. Therefore, the development program would not divide an existing community.

The under-construction Golden State Warriors Event Center Project includes an arena/event center that will host the Golden State Warriors basketball team during the NBA season, as well as provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences and conventions. The Golden State Warriors Event Center Project would be constructed within one city block; it would not change the existing street grid and would therefore not divide an existing community.

The Planning Department received funding from the San Francisco County Transportation Authority to produce a technical study of development on the Fourth and King Street railyards, including exploration of the potential physical and economic feasibility for such development as well as the revenue potential with respect to helping to fund rail infrastructure, such as the Caltrain extension to downtown. Both Caltrain and the California High Speed Rail Authority are engaged in planning for the implementation of a blended rail service that would utilize the railyards site, which is located approximately 0.3 mile north of the project site, across Mission Creek. The Fourth and King Street railyards project would be located within an existing Caltrain railyard. It does not propose any changes to the existing arterial street grid and would not divide an existing community. In fact, one of the concepts in the plan proposes reconfiguring I-280 in a manner that would result in the site no longer being bisected by the elevated I-280 or bordered on its southern edge by an elevated I-280 ramp, which would allow for a more accessible site in terms of connectivity and remove a barrier in the community.

The 701 Third Street project, located approximately 0.2 mile north of the project site across Mission Creek, would demolish an existing building and parking lot and construct an 11-story, approximately 105-foot tall hotel over a below grade parking garage. The 701 Third Street project would be constructed within one parcel; it would not change the existing street grid and would therefore not divide an existing community.

None of the cumulative projects would combine with the proposed project to physically divide an established community because the projects are not located immediately adjacent to the project site. Furthermore, neither the proposed project nor the reasonably foreseeable cumulative projects would include physical features or remove a means of access that would impair mobility within an existing community or between a community and surrounding areas. Cumulative impacts related to physically dividing an established community would be ***less than significant***.

Impact C-LU-2. The proposed project, in combination with other development within the city, would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

As discussed above, the discretionary approvals that would be required for the proposed project to proceed would bring the project into compliance with the land use plans and policies that govern development on the project site. Furthermore, each individual development project

or plan would be evaluated for consistency with applicable land use policies and programs, and any physical impacts associated with policy conflicts would be identified and mitigated to the extent feasible. Cumulative impacts related to consistency with plans and policies would be ***less than significant***.

4.B AESTHETICS

This section describes and analyzes the potential impacts of the Seawall Lot 337 and Pier 48 Mixed-Use Project (proposed project) related to scenic vistas, scenic resources, visual character and quality, and light and glare. The section presents photographic views, describes the existing visual conditions for the project site and its surroundings, identifies existing scenic vistas and scenic resources in areas that could be affected by the proposed project, describes the existing visual character of the project site and its surroundings, and identifies the potential for new sources of light and glare. The impact discussion identifies the considerations applied when evaluating the significance of impacts on visual quality. It describes and evaluates impacts on visual resources and visual quality by using visual simulations of the proposed project. This section also considers whether the proposed project, in combination with other reasonably foreseeable development projects in the vicinity of the project site, would make a considerable contribution to cumulative environmental impacts related to aesthetics.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1) were considered in preparing this analysis. The NOP comments related to aesthetics focused on impacts on viewpoints along the waterfront and in surrounding areas, which are discussed under Impacts AE-1, AE-2, and AE-3. In addition, a number of comments expressed concern over proposed building heights; these are also discussed under Impacts AE-1, AE-2, and AE-3. However, it is important to note that the proposed building heights under review in this Draft Environmental Impact Report (Draft EIR) were reduced following release of the NOP in response to neighborhood concerns. Those adjusted, reduced heights were approved by the voters with the passage of Proposition D in 2015.

As discussed in Chapter 4, *Environmental Setting and Impacts*, the proposed project meets most of the criteria associated with SB 743 (i.e., it is an infill site located within a transit priority area), which states that aesthetic and parking impacts of residential, mixed-use residential, or employment-center infill projects located in transit priority areas are not considered significant impacts on the environment under the California Environmental Quality Act (CEQA). However, it does not fully meet the criteria of being a mixed-use project, because mixed-use projects typically include residential, commercial, and some light industrial uses but not industrial uses. Because the proposed project would include an industrial use (i.e., the proposed industrial use, specifically analyzed as a proposed brewery use, on Pier 48), it would not fit within the generally accepted classification of a mixed-use residential development. Although the majority of the proposed project would include residential and commercial uses, and the industrial use would constitute only an estimated 10 percent of the approximately 2.5 million gross square feet (gsf) of proposed development, this Draft EIR nevertheless applies a conservative interpretation of SB 743. Thus, an analysis of the proposed project's impacts on aesthetics is provided below.

ENVIRONMENTAL SETTING

REGIONAL VISUAL SETTING

The greater San Francisco Bay region is a complex system of mountain ranges, valleys, and waterways that, together, create a unique area that not only defines the character of the region but also contributes to the overall character of California. Some notable areas include the distinctive urban center of San Francisco, the cliffs of the Marin Headland and Pacific Ocean coastline, and the San Francisco Bay (Bay). The region is characterized by panoramic views from the Santa Cruz Mountains and the East Bay Hills, the rolling hillsides, and the numerous waterways.

VISUAL CHARACTER OF THE PROJECT VICINITY

The project site is adjacent to the Mission Bay South Redevelopment Plan area of San Francisco, shown in Figure 4.A-3 in Section 4.A, *Land Use and Planning*, which is characterized by large parcels of land and streets that generally follow a grid pattern. Topographic features in the project vicinity are minimal, and the grading is generally flat. However, Mission Creek, China Basin, the Bay, and Interstate 280 (I-280) represent physical barriers that visually separate Mission Bay from other portions of the city. Therefore, for the purposes of this analysis, the project vicinity is defined as the area bounded by the Bay to the east and I-280 to the west. It extends northward to include development immediately across Mission Creek and China Basin and southward to 16th Avenue. These areas generally correspond to the Mission Bay North[1] and Mission Bay South[2] Redevelopment Plan boundaries that surround the project site.

The 303-acre Mission Bay district has experienced and continues to experience visual transformation in the form of redevelopment. As such, the visual setting of the project vicinity is varied in character. Common visual conditions in the vicinity include paved lots where older industrial development has been removed to make way for redevelopment. In addition, once vacant lots are being developed at numerous construction sites, and rehabilitation activities are preserving older buildings so they can remain viable. Redevelopment in Mission Bay is creating a new urban fabric in the district that comprises an array of architectural styles, some of which correspond to signature styles associated with the designers of each development. Therefore, building massing, scale, materials, and architectural character (with respect to age and architectural style) do not conform to any strongly discernible overall pattern in areas that surround the project site; rather, many developments are visually unique with respect to one another.

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1 San Francisco Redevelopment Agency Commission. 1998. *Design for Development for the Mission Bay North Project Area*. Adopted: September 17, 1998. San Francisco, CA.

2 San Francisco Redevelopment Agency Commission. 2004. *Design for Development for the Mission Bay South Project Area*. Adopted: September 17, 1998. Revised: March 16, 2004. San Francisco, CA.

Much of the development in Mission Bay has been constructed within the past 10 to 15 years, resulting in contemporary architectural styles. Most structures that were built during the period when the area was an active rail yard and dominated by port uses (i.e., 1880s to 1990s) have been demolished. The remaining historical structures in the immediate vicinity of the project site are limited to pier structures and their ancillary buildings along the Bay, Lefty O'Doul Bridge on Third Street, the former San Francisco Fire Department station at the northeast corner of Third Street and China Basin Street, which has been incorporated into the new San Francisco Public Safety Building, Pier 50 Office Building, ATSF Car Ferry Slip, and the Fourth Street/Peter Maloney Bridge.

China Basin is directly north of the project site, situated in the area where the mouth of Mission Creek meets the Bay. Mission Creek once extended from the Mission neighborhood to the Bay but is now channelized west of China Basin to approximately I-280 and undergrounded west of I-280. AT&T Park (a focal point in foreground views from the project vicinity), South Beach Yacht Club, and South Beach Harbor Marina are located north of the project site, across China Basin. These recreational sites, especially AT&T Park, attract millions of viewers to the vicinity annually and provide access to the Bay.

Pier 50, located south and east of the project site, is an active maritime industrial pier with four warehouse sheds on more than 14 acres. Pier 50 provides a ready-reserve berthing facility for the U.S. Department of Transportation Marine Administration (MARAD). Two MARAD transport ships are currently berthed on the east face of Pier 50. Towing and tugboat services, operated by Westar, are located in Shed C, and numerous small, interim tenants use the pier for storage and parking. In addition, a restaurant is located in an approximately 3,400 gsf building at the pier.

The recently completed San Francisco Public Safety Building and multi-family residential uses are located south of the project site; a hotel (under construction) and additional multi-family residential uses are located to the west (on Mission Bay Block 1, see Figure 4.A-3 in Section 4.A, *Land Use and Planning*). The offsite multi-family housing throughout Mission Bay is in the form of high-rise buildings that include commercial spaces, such as coffee shops, restaurants, and banks, usually at street level. The University of California, San Francisco campus occupies a large portion of the project vicinity in the Mission Bay South Redevelopment Plan area, southwest of the project site. Several existing parks in the vicinity provide open green spaces and vegetation. As shown in Figure 4.I-1 in Section 4.I-1, *Wind and Shadow*, these include Giants Promenade/AT&T Plaza, Mission Creek Park, Mission Creek Park South, Mission Creek Park Esplanade, Mission Bay Kids' Park, Mission Creek Park, and Dog Run Park.

Parcel (block) sizes in the vicinity are variable and either rectangular or triangular in shape. Angular and perpendicular road patterns define the edges. Major traffic flow through the vicinity is provided by Third Street, which travels north–south, and Mission Bay Boulevard North and Mission Bay Boulevard South, which travel east–west. Smaller roadways provide additional access.

LIGHT AND GLARE

Light pollution includes all forms of unwanted light in the night sky, such as glare, light trespass, sky glow, and overlighting. Sources of light and glare are abundant in the urban environment of the project vicinity, including streetlights, parking lot lights, security lights, vehicular headlights, internal buildings lights, and reflective building surfaces and windows. On baseball game nights or evenings with other special events, AT&T Park is a source of light, with its event field lighting, exterior stadium lighting, and emergency lighting.

VIEWS FROM THE PROJECT VICINITY

Foreground views in the project vicinity include newer architecture associated with adjacent development; roadways, sidewalks, and associated infrastructure; paved lots; piers; parks and recreational facilities; and the Bay. Middle ground and background views[3] are limited to the north, west, and south by surrounding development. Middle ground views to the east include views of the Bay, the Bay Bridge, and Yerba Buena Island, while the East Bay Hills and Oakland skyline are visible in the background to the east, across the Bay. Views from the project vicinity are discussed in more detail below.

VISUAL CHARACTER OF THE PROJECT SITE

VISUAL CHARACTER

As shown in Figure 2-1 (Chapter 2, *Project Description,* page 2-7), the approximately 28-acre project site is bounded by Mission Creek and China Basin to the north, the Bay to the east, Mission Rock Road to the south, and Third Street to the west. Separate from the proposed project, plans exist for a segment of the San Francisco Bay Trail (Bay Trail) to run through the project site,[4] along Terry A. Francois Boulevard, to connect on-street segments that already exist to the north and south.

Regional vehicular access to and from the project site is provided by Interstate 80 (I-80), I-280, and US 101. Local vehicular access to the project site is currently provided via Third Street, Terry A. Francois Boulevard, and Mission Rock Street. As shown in Figure 2-3 (Chapter 2, *Project Description,* page 2-12), the project site comprises several areas: Seawall Lot 337, Parcel P20, Pier 48 and the adjacent marginal wharf, China Basin Park, and Terry A. Francois Boulevard.

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[3] There are three distinct distance zones for assessing potential visual impacts. These are foreground views (approximately 0 to ¼–½ mile), middle ground views (approximately ¼–½ mile to 3–5 miles), and background views (approximately 3–5 miles to beyond).

[4] San Francisco Bay Trail. 2016. *San Francisco Bay Trail – Navigational Map*. Last updated: 2016. Oakland, CA. Available: http://baytrail.org/baytrailmap.html. Accessed: April 14, 2016.

Seawall Lot 337 is an approximately 14.2-acre paved site that is currently used for parking during AT&T Park baseball games and other events as well as commuter parking (Lot A), in addition to pop-up retail and special events. Lot A provides approximately 2,170 delineated parking spaces; an additional 16 spaces are provided for buses on the eastern side of Seawall Lot 337, along Terry A. Francois Boulevard. An additional 16 buses can be parked along the east–west segment of Terry A. Francois Boulevard north of the Seawall Lot 337 site; however, this area is closed during games.

The northwest corner of Seawall Lot 337 currently includes a temporary pop-up installation called The Yard at Mission Rock, which is constructed out of 16 recycled shipping containers. The Yard hosts food vendors, public gatherings, and programming opportunities for the communities. Temporary structures are erected periodically throughout the year to accommodate events on the site. Except for two portable pay-station kiosks and a billboard, Seawall Lot 337 does not contain any permanent structures; it functions as a surface parking lot and an area for pop-up retail.

Parcel P20 is a 0.3-acre, approximately 20-foot-wide paved strip of land that borders the south side of Seawall Lot 337, along the north side of Mission Rock Street. Under the Mission Bay South Redevelopment Plan, the parcel was originally intended to act as a narrow landscape separation between residential uses on the south side of Mission Rock Street and industrial uses at Seawall Lot 337. However, there are no visual barriers or separations between Seawall Lot 337 and Parcel P20, which is also used for parking and special events. Therefore, Parcel P20 and Seawall Lot 337 look like a visual continuation of one another.

The project site also includes approximately 3.5 acres of Terry A. Francois Boulevard, which is located east of Parcel P20. This street curves around Seawall Lot 337 from Third Street to the northwest to Mission Rock Street to the southeast.

Pier 48 is a 261,000 gsf pile-supported facility with two one-story warehouse spaces (Shed A and Shed B) that are connected by Shed C, also a one-story structure. The enclosed warehouse spaces were completed in 1929, with the connector shed (Shed C) built in 1938. Because of fire damage, Shed C was renovated by the Port of San Francisco (Port) in 2002. The three connected sheds on Pier 48 are all approximately 40 feet in height. The sheds form a "U" shape, with the uncovered interior "valley" open to the sky.

The southern berth of Pier 48 is occupied by tugboat operations and maintenance facilities for ferry boats. The northern apron is red-tagged,[5] vacant, and not actively used for any purpose. Public access has never been available to the aprons because they are in varying states of disrepair or encumbered by existing maritime industrial uses that are incompatible with unrestricted public access.

[5] Structures that have been red-tagged are severely damaged, to the degree that the structure is too dangerous to occupy.

Pier 48 is the southernmost pier structure within the Port of San Francisco Embarcadero Historic District (Embarcadero Historic District), which is listed in the National Register of Historic Places (National Register). The Embarcadero Historic District encompasses an approximately 3-mile stretch of the city's northeastern waterfront, from Pier 45 to the north to Pier 48 to the south.[6] Pier 48 is identified as a contributory resource to the Embarcadero Historic District but is not individually listed as a historic structure.

The 1.4-acre Pier 48 and Pier 50 access areas are located directly west and south of Pier 48. To the south, between Pier 48 and Pier 50 and east of Terry A. Francois Boulevard, is a 0.50-acre area that is currently referred to as the Pier 48 marginal wharf. A portion of the marginal wharf is currently leased on a month-to-month basis to the One Big Man & One Big Truck Moving Company and Westar, providing for parking, truck access, and truck turnaround areas in the interim period until the proposed project is developed. A portion of the southern end of the marginal wharf is leased by a restaurant; the rest of the marginal wharf is vacant.

China Basin Park makes up the northern portion of the project site. The park includes a lawn with a single row of 26 nonheritage trees, viewing areas, benches, picnic areas, lighting, a small baseball diamond, historic markers representing the Giants from 1958 through 1999, a statue of former Giants player Willie McCovey, and a paved bicycle/pedestrian perimeter pathway. The park provides scenic urban views of China Basin, AT&T Park, and surrounding urban development as well as views of the Bay, Bay Bridge, and East Bay Hills.

LIGHT AND GLARE

Nighttime lighting at the project site is variable, ranging from low when the parking lot is not being used for night games at AT&T Park to fairly well-lit when there are night games. Without night games, the lower lighting levels are created by street lighting, vehicle headlights on local streets, exterior security lighting associated with the onsite pop-up retail and pier sheds, and interior and exterior lighting from buildings located offsite. When there are night games, lighting levels at the project site increase because parking lot lighting is turned on and there are more vehicle headlights in the area as patrons of AT&T Park access parking areas. Sources of daytime and nighttime glare include reflections from pavement, vehicle windows and surfaces, onsite and offsite building windows and surfaces, and nearby water bodies.

VIEWS FROM THE PROJECT SITE

Foreground views from the project site are similar to those from the project vicinity (as described above) and include views of the newer architecture associated with redevelopment in Mission Bay; roadways, sidewalks, and associated infrastructure; paved and vacant lots;

[6] Note that the pier numbering convention used by the Port assigns odd numbers to facilities north of the Ferry Building and even numbers to facilities south of the Ferry Building.

piers; and parks. AT&T Park is a focal point, facing north. Similarly, middle ground and background views to the north, west, and south are limited by surrounding development; however, middle ground views to the east include views of the Bay, the Bay Bridge, and Yerba Buena Island. The East Bay Hills and Oakland skyline are visible in the background across the Bay, facing east. The project site offers predominantly nondescript views of a large parking area and port warehouse structures. However, although the developed areas surrounding the site are in a state of flux because of redevelopment, there are higher-quality scenic views available from the project site toward AT&T Park, the Bay, and the surrounding Bay Area.

The project site is flat, lacking an elevated perspective out and over the Bay. Although limited, east-facing views are available along Terry A. Francois Boulevard near China Basin Park, between Piers 48 and 50, and near China Basin Park because no foreground development is present to obscure the views. This area includes views of the Bay and sailboat masts associated with the South Beach Harbor Marina in the foreground, the Bay in the foreground to background, the Bay Bridge in the middle ground, and the East Bay Hills and development associated with Oakland and Alameda in the background.

SCENIC AND VISUAL RESOURCES

Scenic resources are elements in the environment such as topographic features, trees, rock outcroppings, or other features of the built or natural environment that contribute to a scenic public setting. Scenic resources may be protected by federal, state, or local regulations or highly valued by the local community.

"Scenic vista views" are views from public areas that generally encompass a wide area with long-range views to surrounding elements in the landscape. Scenic vista views are often of local and regional value. Such views are often visible because of a flat landscape with little vegetation or an elevated viewing point that allows for views out and over the surrounding landscape. Vistas also have a directional range, which is to say that some viewpoints have scenic vistas with a 360-degree view in all directions, while others may be limited in one direction in a manner that reduces the line-of-sight angle and amount of vista that is visible. In such cases, narrower vista views are often confined by topography, development, and vegetation. Scenic vista viewsheds allow the public to access panoramic views of natural features, including the ocean, striking or unusual natural terrain, or unique urban or historic features that are identified in adopted policies or plans. The term "view corridor" refers to views of important features along a path, roadway, or other horizontal corridor where the view is confined by obstructions such as development or vegetation. As such, a view from a view corridor has limited lateral visibility. This is referred to as a "channelized view."

PROJECT SITE SCENIC RESOURCES

No state or local designated scenic routes are associated with the project site. The project site is also not located on any street segment that has been identified in the *San Francisco General Plan* (General Plan) for the quality of its views (refer to the Regulatory Framework for the General Plan Urban Design Element map, Street Areas Important to Urban Design and Views).[7] Pier 48 is not individually listed as a historic resource but is identified as a contributory resource to the Embarcadero Historic District. For purposes of this analysis, the Embarcadero Historic District is considered a scenic resource.

VIEWS OF THE PROJECT SITE FROM THE SURROUNDING AREAS

Public viewing points within the city include parks, publicly accessible buildings, and public rights of way that offer views of the urban and natural landscapes that make up the Bay Area viewshed. Development patterns within the city overlay undulating topography, and the range of building heights creates gaps, peaks, and dips that allow taller buildings to stand out in profile against the sky. This tension in the skyline between conformity and variety results in a recognizable visual identity for San Francisco. It also creates elevated vantage points and gaps in development that allow views to the surrounding local city and regional Bay Area landscape. Many areas are visible from the project site, and the project site is visible from several surrounding areas, as discussed below.

Adjacent Streets. From Third Street, bordering the project site, complete views of the Bay Bridge are mostly obscured by trees within China Basin Park and AT&T Park between Terry A. Francois Boulevard and Channel Street. From Channel Street and the southern half the block, the upper towers of the Bay Bridge can be seen above the tree line. From midblock south to Mission Rock Road, Yerba Buena Island and portions of the towers and deck of the Bay Bridge can be seen; however, views of the water are not available. The East Bay Hills can be seen between gaps in development. Views from Third Street are available because the project site is flat and, for the most part, without built structures.

Bay Trail. The project site is also visible from bicycle and pedestrian trails located in the vicinity, as shown in Figure 4.E-5 in Section 4.E, *Transportation*. The Bay Trail, which travels along the San Francisco waterfront and the Embarcadero, is a series of existing and planned regional bicycle and hiking trails that are administered by the Association of Bay Area Governments (ABAG). The trails will eventually connect and provide a continuous trail system around the perimeter of the San Francisco and San Pablo Bays, linking 47 cities with 500 miles of trails.[8]

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[7] City and County of San Francisco. 2010. *San Francisco General Plan*. Urban Design Element. Last updated: December 7, 2010. San Francisco, CA. Available: http://sf-planning.org/ftp/General_Plan/I5_Urban_Design.htm. Accessed: April 11, 2016.

[8] Association of Bay Area Governments. 2016. *Welcome to the San Francisco Bay Trail.* Available: http://baytrail.org/about-the-trail/welcome-to-the-san-francisco-bay-trail/. Accessed: July 29, 2016.

The portion of the Bay Trail in the project vicinity runs along the San Francisco waterfront south of AT&T Park and currently ends at Lefty O'Doul Bridge. Per the San Francisco Southern Waterfront Bay Trail map, plans exist for a Bay Trail connection from Lefty O'Doul Bridge, through China Basin Park, to a segment along Terry A. Francois Boulevard.[9] Because of the natural Bay setting in the foreground and background views of Twin Peaks and other hillsides throughout the area, the portion of the Bay Trail adjacent to AT&T Park is considered scenic. Views toward the north and east encompass the panoramic and expansive scenery of the Bay, the Bay Bridge, and the East Bay Hills. Depending on the location of the bicyclist/pedestrian on the Bay Trail, certain features, such as the trees in China Basin Park and Pier 48, are visible to the south, across China Basin.

I-80 and I-280. Elevated views toward the project site and surrounding Bay Area are also available from freeways, including northbound I-280 in the project vicinity, approximately 0.5 mile west of the project site, and westbound I-80 as it crosses the Bay, approximately 1 mile north of the project site. I-280, from the I-80 interchange in San Francisco to State Route (SR) 17 in San José, and the Bay Bridge/I-80, from I-280 in San Francisco to SR 61 in Oakland, are eligible State Scenic Highways (although not officially designated) under the state's Scenic Highway Program.[10] The portion of I-280 through the project area is a part of the 49-Mile Scenic Drive.[11] In addition, Map 2 of the General Plan Urban Design Element,[12] Plan for Street Landscaping and Lighting, notes that I-280 has important views that should not be blocked by landscaping. Portions of I-280 that are identified on the map as having important views in the project vicinity have, however, been obscured in many cases by new development. Small segments still retain urbanized views toward the Mission Bay district and its associated development, with small portions of the East Bay Hills visible between gaps in development. Views of the Bay and East Bay Hills from I-280 are limited and available mostly from the freeway, looking down the Mission Creek channel, and the 6th Street exit off of I-280, which is at a higher elevation than I-280, looking down the Mission Creek channel and Mission Bay Boulevard roadway corridor. This narrow view corridor includes views of the project site.

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[9] Association of Bay Area Governments. 2016. *San Francisco Southern Waterfront.* Map 2. Available: http://baytrail.org/get-on-the-trail/map-by-number/san-francisco-southern-waterfront/. Accessed: July 29, 2016.

[10] California Department of Transportation. 2016. *Scenic Highway Program, List of Eligible and Officially Designated State Scenic Highways.* Last updated: March 16, 2016. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm. Accessed: May 2, 2016.

[11] San Francisco To Do. 2012. *49-Mile Scenic Drive Map*. Last updated: 2012. Available: http://www.sftodo.com/maps/49-mile-scenic-drive-san-francisco.pdf. Accessed: May 6, 2016.

[12] City and County of San Francisco. 2010. *San Francisco General Plan*. Urban Design Element. Last updated: December 7, 2010. San Francisco, CA. Available: http://sf-planning.org/ftp/General_Plan/I5_Urban_Design.htm. Accessed: April 11, 2016.

Scenic vista views from I-80 (Bay Bridge) are expansive, offering direct, unobscured views of port areas along the shoreline, the project site, and urban development in the city. In addition, the Santa Cruz Mountain Range is visible beyond John McLaren Ridge and the San Bruno Mountains.

San Francisco Hillsides. San Francisco's numerous hills offer expansive, long-range scenic views of the Bay and the Mission Bay area, including views from Potrero Hill, with its middle ground views of the project site, and Twin Peaks, with background views of the project site. Views from these neighborhoods are available from local roadways, parks, and developed areas on the hillsides. The long-range scenic vista views are extensive, allowing views to the background. These include views to the city, the East Bay, Yerba Buena Island, the Bay Bridge, the San Francisco Peninsula (Peninsula), and the Santa Cruz Mountains. From these elevated vantage points, the high-rise buildings of the San Francisco Financial District are visible next to the southern towers of the Bay Bridge and Yerba Buena Island. The high-rise buildings transition to low- and mid-rise buildings in areas that surround the Financial District, including downtown, South of Market, Mission District, The Castro, and Noe Valley. From the hillsides, views of the city's port areas are limited when looking toward the project site because inland development often obscures such views.

Other Views. The city's port areas and other development are visible from the East Bay. Broader forms and patterns are most apparent as well as large, distinct features (e.g., lightly colored port cranes, the Bay Bridge). Finer details, including features at the project site, are not discernable because of distance. Commonly occurring atmospheric haze and fog, as well as silhouetting during the evening hours, reduce the ability to see detailed views of the city from the East Bay.

PROJECT SITE VIEWERS

Immediate project site viewers include residential, recreational, and commercial viewers as well as viewers on local roadways. Residential viewers living next to the project site have high visual sensitivity to changes occurring at the project site. Although residential viewers are accustomed to views of surrounding development and nearby construction activities, they view the project site for extended periods of time. Therefore, residential viewers are likely to have a high sense of ownership over such views, especially views of AT&T Park, South Beach Harbor Marina, the Bay, the Bay Bridge, Yerba Buena Island, and the surrounding Bay Area. However, it is important to note that private views are not considered scenic under the City's CEQA significance criteria. They are discussed here for informational purposes only.

Recreational viewers have moderate/high visual sensitivity[13] because they are more likely to value the natural and urban environments, appreciate the visual experience, have a strong sense of ownership, and be sensitive to changes in views. Recreational viewers use parks, waterways,

[13] Moderate and moderate/high sensitivity includes viewer groups who would be affected by changes to the existing visual character. The potential exists for these viewer groups to express concern over visual impacts.

trails, and roadways. They are likely to enjoy the local urban scenery and seek out the scenic views associated with the Bay. Local recreationists tend to have a higher sense of ownership over views and resources than visiting recreationists; however, it is likely that visiting recreationists would be familiar with the area and therefore would also place a high value on existing views.

Commercial viewers include business owners and workers (i.e., occupants) as well as patrons of the businesses. Business occupants have moderate visual sensitivity because, although they are likely to have a sense of ownership over local views, they are more focused on operating their businesses and more likely to see additional development as a favorable source of new patrons. Business patrons are likely to have moderate/low visual sensitivity because they are more focused on visiting the businesses than on views of the project site. They have intermittent and limited views of the project site.

Local roadway users include commuters traveling to and from work, shoppers, recreational travelers, and drivers of commercial vehicles. Roadway users travel at speeds up to the posted speed limit, typically 30 miles per hour in the project area (such as Third Street and Fourth Street). Depending on speed and the amount of traffic, drivers and passengers are able to take in brief views of the scenery around them. Most views from the project site are of surrounding development, including the focal point of the area, AT&T Park. However, motorists generally focus their attention on the roadway ahead.

There are also viewers outside the vicinity who can see the project site within the middle ground and background of their viewsheds. These distant viewers of the project site include residential, recreational, and commercial viewers as well as viewers on freeways and local roadways. Distant viewers of the project site would have sensitivities ranging from moderate/low (i.e., far away, views mostly obscured) to moderate/high (i.e., closer, scenic vistas available).

REGULATORY FRAMEWORK

FEDERAL

SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION AND ILLUSTRATED GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

The Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (the SOI Rehabilitation Standards and the SOI Guidelines, respectively) provide guidance for reviewing work to historic properties.[14] Developed by the National Park Service for reviewing certified rehabilitation tax credit projects, the SOI Rehabilitation Standards have been adopted by local government bodies across the country for reviewing proposed work to historic properties under local preservation ordinances. The SOI Rehabilitation Standards provide a useful analytical tool for understanding and describing the potential impacts of changes to historic resources, including new construction inside or adjoining historic districts.

REGIONAL

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION BAY PLAN AND PUBLIC ACCESS DESIGN GUIDELINES

The San Francisco Bay Conservation and Development Commission (BCDC) is responsible for protecting and enhancing the Bay as well as encouraging responsible and productive use of the Bay for this and future generations. A portion of the project site falls within the shoreline band and is subject to BCDC review for consistency with the Bay Plan. Bay Plan policies call for the preservation of scenic Bay views; the provision of diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, around the Bay; and encouragement for the development of water-oriented commercial recreational establishments, such as restaurants, specialty shops, private boatels, recreational equipment concessions, and amusements in urban areas adjacent to the Bay. In addition, the Bay Plan encourages the preservation of historic structures and districts, including public access to the exterior and, where appropriate, the interior of these structures.

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[14] U.S. Department of Interior, National Park Service, Cultural Resources, Preservation Assistance Division. 1992. *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings*. The standards, revised in 1992, were codified as 36 CFR Part 68.3 in the July 12, 1995, *Federal Register* (Vol. 60, No. 133). The revision replaces the 1978 and 1983 versions of 36 CFR 68 entitled *The Secretary of the Interior's Standards for Historic Preservation Projects.* The 36 CFR 68.3 standards are applied to all grant-in-aid development projects assisted through the National Historic Preservation Fund. Another set of standards, 36 CFR 67.7, focuses on "certified historic structures," as defined by the IRS Code of 1986. The standards in 36 CFR 67.7 are used primarily when property owners are seeking certification for federal tax benefits. The two sets of standards vary slightly, but the differences are primarily technical and nonsubstantive in nature. The guidelines, however, are not codified in the *Federal Register*.

The purpose of the BCDC Public Access Design Guidelines for the Bay is to provide the Bay region with a design resource for development projects along the shoreline of the Bay. These guidelines provide suggestions for site planning as well as recommendations for designing and developing attractive and useable public access areas. The guidelines are not legally enforceable standards but are an advisory set of design principles aimed at enhancing shoreline access while providing for the protection of Bay resources, regional livability, and local economic prosperity.[15] The proposed project would be generally consistent with these policies through its proposed preservation of the existing structures on Pier 48 consistent with the Secretary of the Interior's standards, the proposed provision of public access to these structures for restaurant, active/retail, tour, and exhibition uses as well as meeting space, the proposed provision of public pedestrian access to presently inaccessible apron areas, and the proposed connection to and expansion of the Blue Greenway pedestrian and bicycle access to the shoreline.

LOCAL

SAN FRANCISCO GENERAL PLAN

The General Plan provides policies and objectives to guide urban design decisions. City and County of San Francisco (City) decision-makers will evaluate the proposed project in accordance with provisions of relevant plans and policies. Policies of the General Plan related to the topic of aesthetics are found in the Urban Design Element and, to a lesser extent, other elements, as listed below.

The following policies from the Recreation and Open Space Element of the General Plan are applicable to the proposed project:

- Policy 1.12: Preserve historic and culturally significant landscapes, sites, structures, buildings, and objects.
- Policy 3.3: Develop and enhance the City's recreational trail system, linking it to the regional hiking and biking trail system, and consider restoring historic water courses to improve stormwater management.

The following policies from the Transportation Element of the General Plan are applicable to the proposed project:

- Policy 2.3: Design and locate facilities to preserve the historic city fabric and the natural landscape and protect views.

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[15] San Francisco Bay Conservation and Development Commission. 2005. *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay.* April. Available: http://www.bcdc.ca.gov/planning/reports/ShorelineSpacesPublicAccessDesignGuidelinesForSFBay_Apr2005.pdf. Accessed: November 22, 2016.

- Policy 24.1: Preserve existing historic features such as streetlights and encourage the incorporation of such historic elements in all future streetscape projects.
- Policy 30.1: Ensure that new or enlarged parking facilities meet need, locational, and design criteria.

The following objectives and policies from the Urban Design Element of the General Plan are applicable to the proposed project:

- Objective 1: Emphasis of the characteristic pattern that gives the city and its neighborhoods an image, sense of purpose, and means of orientation.
- Policy 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.
- Policy 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.
- Policy 1.5: Emphasize the special nature of each district through distinctive landscaping and other features.
- Policy 1.8: Increase the visibility of major destination areas and other points for orientation.
- Objective 2: Conservation of resources that provide a sense of nature, continuity with the past, and freedom from overcrowding.
- Policy 2.3: Avoid encroachments on San Francisco Bay that would be inconsistent with the Bay Plan or the needs of the city's residents.
- Policy 2.4: Preserve notable landmarks and areas of historic, architectural, or aesthetic value and promote the preservation of other buildings and features that provide continuity with past development.
- Policy 2.5: Use care in remodeling of older buildings in order to enhance rather than weaken the original character of such buildings.
- Policy 2.6: Respect the character of older development nearby in the design of new buildings.
- Policy 2.7: Recognize and protect outstanding and unique areas that contribute in an extraordinary degree to San Francisco's visual form and character.
- Objective 3: Moderation of major new development to complement the city pattern, the resources to be conserved, and the neighborhood environment.
- Policy 3.1: Promote harmony in the visual relationships and transitions between new and older buildings.

- Policy 3.2: Avoid extreme contrasts in color, shape, and other characteristics that will cause new buildings to stand out in excess of their public importance.
- Policy 3.3: Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations.
- Policy 3.6: Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction.
- Policy 3.7: Recognize the special urban design problems posed in development of large properties.
- Policy 3.8: Discourage accumulation and development of large properties, unless such development is carefully designed with respect to its impact upon the surrounding area and upon the city.
- Policy 4.12: Install, promote, and maintain landscaping in public and private areas.
- Policy 4.13: Improve pedestrian areas by providing human scale and interest.
- Policy 4.14: Remove and obscure distracting and cluttering elements.
- Policy 4.15: Protect the livability and character of residential properties from the intrusion of incompatible new buildings.

The following policies from the Community Facilities Element of the General Plan are applicable to the proposed project:

- Policy 3.5: Develop neighborhood centers that are multipurpose in character, attractive in design, secure and comfortable, and inherently flexible in meeting the current and changing needs of the neighborhood served.

The following policy from the Arts Element of the General Plan is applicable to the proposed project:

- Policy 1.1: Promote inclusion of artistic considerations in local decision-making.

In addition to the policies above, the Plan for Street Landscaping and Lighting, Map 2 of the Urban Design Element, notes that I-280 has important views that should not be blocked by landscaping. The Street Areas Important to Urban Design and Views map of the Urban Design Element identifies streets according to the quality of their views, with an emphasis on the protection of public views of open space and water bodies. Within the project vicinity, Third Street between Mission Boulevard and 16th Street is identified as an "Important Street View for Orientation," but, as noted above, the project site would not be visible from this location because of existing development and street trees that block views of the project site. In addition, Channel Street from I-280 to Third Street is identified as a "Street that Extends the Effect of Public Open Space" because it is located directly adjacent to Mission Creek Park and Mission Creek Garden. However, the triangular area created by Fourth, Channel, and Third Streets

(Mission Bay Block 1) is being developed and will not be open space. Therefore, the segment of Channel Street between Fourth and Third Streets is not considered a scenic resource because of its views of the Bay.

Voters approved Proposition D (the Mission Rock Affordable Housing, Parks, Jobs, and Historic Preservation Initiative) on November 3, 2015. Prior to its passage, General Plan Urban Design Element Map 4 (Urban Design Guidelines for Height of Buildings) stated that buildings within the western portion of Seawall Lot 337 should range from 161 to 240 feet in height and that buildings within the eastern portion of Seawall Lot 337 and Pier 48 should range from 0 to 40 feet in height. The 40-foot height restriction reflected rezoning of the project site to the Mission Bay Open Space Use District in 1991 as part of an earlier Mission Bay Redevelopment Plan that the Board of Supervisors later rescinded, without rescinding the rezoning. Proposition D amended the height and bulk restrictions for the project site by establishing the Mission Rock Height and Bulk District, codified at Section 291 of the Planning Code and described below. The district provides for a range of height limits on the project site that are consistent with the proposed project and amended Urban Design Element Map 4. The height limits established pursuant to Proposition D apply rather than the prior height limits that reflected the rescinded 1991 redevelopment plan. Regarding bulk controls, prior to the passage of Proposition D, Urban Design Element Map 5 (Urban Design Guidelines for Bulk of Buildings) established the following guidelines for buildings within the portion of Seawall Lot 337 located along Third Street and above a height of 80 feet:

- Maximum plan dimension of 110 feet, and
- Maximum diagonal plan dimension of 125 feet.

The remainder of the project site was not subject to any bulk restrictions, pursuant to Urban Design Element Map 5, prior to the passage of Proposition D, which amended Map 5 so that the prior bulk guidelines would not apply. Instead, Proposition D called for the creation of design controls, consistent with the purposes of Proposition D and Planning Code Section 251, Height and Bulk District Purposes.

SAN FRANCISCO PLANNING CODE

Section 291. The San Francisco Planning Code (Planning Code), which incorporates by reference the City's zoning maps, implements the general plan and governs permitted uses, densities, and building configurations within the city. Proposition D amended Zoning Map Sheet HT08 to change the height and bulk classifications of the project site from OS and 40-X to those of a new Mission Rock Height and Bulk District. Proposition D amended the Planning Code by adding a new section, Section 291, which governs the new Mission Rock Height and Bulk District. Section 291 establishes height limits for the project site, which are consistent with the proposed project, and requires the adoption of design controls to guide the design of improvements within established height limits. The Vision and Design Intent document (Vision

Document) is an overarching planning document that was prepared for the project. It contains a broader urban design vision that guides the Design Controls, Sustainability Strategy, Infrastructure Plan, and Transportation Plan for the project site. The proposed project also includes design controls, which would become final upon Planning Commission approval of the Mission Rock Design Controls (Design Controls) as part of project approval.[16] The Design Controls outline the controls and describe to developers, designers, and permitting agencies how the comprehensive design of the proposed project comes together to achieve the vision for the proposed project. The Design Controls guide the proposed development with respect to open space, streets, bulk, massing, setbacks, landscaping, and other physical design and use aspects of the proposed project.

Section 139. San Francisco Planning Code Section 139, Standards for Bird-Safe Buildings,[17] focuses on buildings, both public and private, that create location-specific hazards (i.e., the building location increases bird injury and mortality) and building-feature hazards (i.e., increased bird injury and mortality regardless of location). Location-specific hazards apply to buildings in or within 300 feet of an Urban Bird Refuge having a direct line of sight. Section 139 requires 90 percent of glazing in the Bird Collision Zone (60 feet above grade, plus 60 feet above an adjacent vegetated roof, 2 acres or larger) to be treated to increase its visibility to birds (i.e., fritted,[18] stenciled, frosted, or covered with netting, screens, grids, or bird-visible ultraviolet patterns). Lighting must also be minimized.

For location-specific hazards involving new buildings, the following requirements apply:

- Façade Treatments: A bird-safe glazing treatment is required such that the Bird Collision Zone consists of no more than 10 percent untreated glazing. Building owners are encouraged to concentrate permitted transparent glazing on the ground-floor and lobby entrances to enhance visual interest for pedestrians.
- Lighting Design: Minimal lighting shall be used. Lighting shall be shielded. No uplighting shall be used. No event searchlights should be permitted for the property.

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[16] These Mission Rock Design Controls document, which is in draft form as of the date of the publication of this DEIR, is subject to minor modifications and is provided in Appendix 2 to this DEIR. All references to Design Controls throughout this DEIR are to this draft document, which would be finalized by the time the project is approved.

[17] City and County of San Francisco. 2011. *Standards for Bird-Safe Buildings*. San Francisco Planning Department. July 14. Available: http://sf-planning.org/standards-bird-safe-buildings.

[18] *Fritted glass* refers to glass with ceramic or metal particles that have been fused to the glass to create an opaque or textured surface. The particles are generally opaque and can be applied to either the entire surface of the glass or just particular areas to create decorative patterns.

In addition to regulating buildings that pose a locational hazard to birds (i.e., buildings in and within 300 feet of an Urban Bird Refuge), Section 139 applies similar standards to all new or substantially remodeled buildings in San Francisco with certain features (i.e., feature-related standards). Specifically, all free-standing glass walls, wind barriers, skywalks, balconies, and greenhouses on rooftops that have unbroken glazed segments approximately 24 square feet and larger in size must be treated with a bird-safe glazing treatment, such as fritting, netting, permanent stencils, frosted glass, exterior screens, physical grids placed on the exterior of the glazing, or ultraviolet patterns that are visible to birds. For both locational and feature-related hazards, vertical elements of the window patterns should be at least ¼ inch wide, with a minimum spacing of 4 inches, or have horizontal elements at least ⅛ inch wide, with a maximum spacing of 2 inches.

MISSION BAY SOUTH REDEVELOPMENT PLAN AREA

The Mission Bay South Redevelopment Plan, established in 1998, created the basic land use controls for the Mission Bay South Redevelopment Plan area.[19] Parcel P20 is the only portion of the project site within the Mission Bay South Redevelopment Plan area. The proposed project would remove Parcel P20 from the Mission Bay South Redevelopment Plan area. Once removed, the entire project site would be directly adjacent to the Mission Bay South Redevelopment Plan area to the south and west. For informational purposes, the urban design objectives and policies of the plan include:

- Objective 3: Emphasize in Mission Bay South the characteristic of San Francisco development patterns, which give its neighborhoods image and means of orientation.
- Policy 1: Provide pedestrian scale and interest in ground-floor treatments of buildings through the use of treatments such as clear glass fenestration, cornice treatments, and detailed faces.
- Policy 2: Design in consideration of protecting major views of the Bay, the Bay Bridge, and the downtown skyline from Mission Bay South and, if feasible, the elevated I-280 freeway along Mission Bay South, using street view corridors, open space, the careful placement of building forms, and building massing.
- Policy 3: Create visual and physical access to the San Francisco Bay and the channel of China Basin.
- Policy 4: Recognize that buildings, open space, and view corridors, seen together, will create the character of Mission Bay South.

[19] San Francisco Redevelopment Agency. 1998. "Redevelopment Plan for the Mission Bay South Redevelopment Project." Adopted November 2, 1998; amended July 9, 2013. Available: http://sfocii.org/sites/default/files/FileCenter/Documents/8895-MBS%20Red%20Plan%20First%20Amendment.pdf. Accessed November 22, 2016.

- Policy 5: Achieve high-quality design for buildings and landscaping.
- Policy 6: Emphasize the importance of intersections by encouraging higher-density uses, taller buildings (one or two stories or the tallest portion of buildings), and architectural variety on street corners.
- Policy 7: Avoid extreme contrasts in color, shape, and other characteristics, which will cause new buildings to stand out in excess of their public importance.
- Policy 8: Promote building forms that enhance sun exposure on public open spaces.
- Objective 4: Create a building form for the Mission Bay South area such that the scale of new development relates to the adjacent waterfront and to adjacent buildings.
- Policy 1: Building heights should decrease as they approach the water's edge.
- Policy 2: Provide variety in building design within a block to break up the perception of bulk and to achieve a visually interesting streetscape.

PORT COMMISSION RESOLUTION 04-89 AND HISTORIC PRESERVATION REVIEW GUIDELINES FOR PIER AND BULKHEAD WHARF SUBSTRUCTURES

The Port of San Francisco Historic Preservation Review Guidelines for Pier and Bulkhead Wharf Substructures (Guidelines) identify how the SOI Rehabilitation Standards should be interpreted and applied to historic resources within the Port of San Francisco Embarcadero Historic District. The Guidelines are used in the review of pier and bulkhead wharf substructure projects that are subject only to approval by the Port. Projects that would affect Port of San Francisco Embarcadero Historic District resources and are subject to review and approval through any of the following agency programs are considered projects that have undergone SOI Rehabilitation Standards compliance review by those agencies and, therefore, are not subject to the Guidelines: (a) federal undertakings that require Section 106 consultation, (b) federal historic preservation tax credit projects that require State Office of Historic Preservation and National Park Service approvals, or (c) San Francisco Landmarks Preservation Advisory Board projects that are subject to Planning Code Article 10 provisions for City landmarks and City historic districts.

ENVIRONMENTAL IMPACTS

This section describes the impact analysis related to aesthetics for the proposed project. It describes the methods used to determine the impacts of the proposed project and lists the thresholds used to conclude whether an impact would be significant. As applicable, measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The proposed project would have a significant effect under CEQA if it would result in any of the conditions listed below.

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment that contribute to a scenic public setting.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or substantially affect other people or properties.

METHODS FOR ANALYSIS

The visual quality of an area relates to the physical appearance and characteristics of the built environment, the proximity and balance of human-made structures with open space or landscaping, and views of public open space or more distinct landscape features such as hills, water bodies, or built landmarks. These elements help define a sense of place and a physical orientation in a larger visual setting. The project site is not located in a pristine natural environment or rural area; instead, the project site is within a human-made environment that is part of an established community. Visual conditions within the vicinity of the project site are defined by a mix of local roadways, large blocks that are either vacant or under construction, and industrial, office, recreational, residential, and commercial development. The interplay of these elements of the visual setting varies, depending on the viewer location. Implementation of the proposed project would change the appearance of the project site and the surrounding community by constructing up to 2.7 to 2.8 million gsf of residential, commercial, production, and active/retail uses on 11 proposed development blocks on Seawall Lot 337 and rehabilitating and reusing Pier 48 for industrial, restaurant, active/retail, tour, and exhibition uses. The blocks on Seawall Lot 337 would be developed with building heights ranging from 90 feet (approximately seven stories) to a maximum of 240 feet (approximately 23 stories), excluding the mechanical and other accessory penthouse roof enclosures, which would extend an additional up to 20 feet (40 feet on Block F) above the rooflines.

Design and aesthetics are, by definition, subjective and open to interpretation by decision-makers and the public. However, as with all CEQA impacts, the effects of a project must be considered in the physical context of the project site and compared to existing conditions. A proposed project would, therefore, be consider to have a significant adverse effect on visual quality under CEQA only if it were to cause a substantial and demonstrable negative change in the physical environment that affects the public in one or more ways, as outlined in the

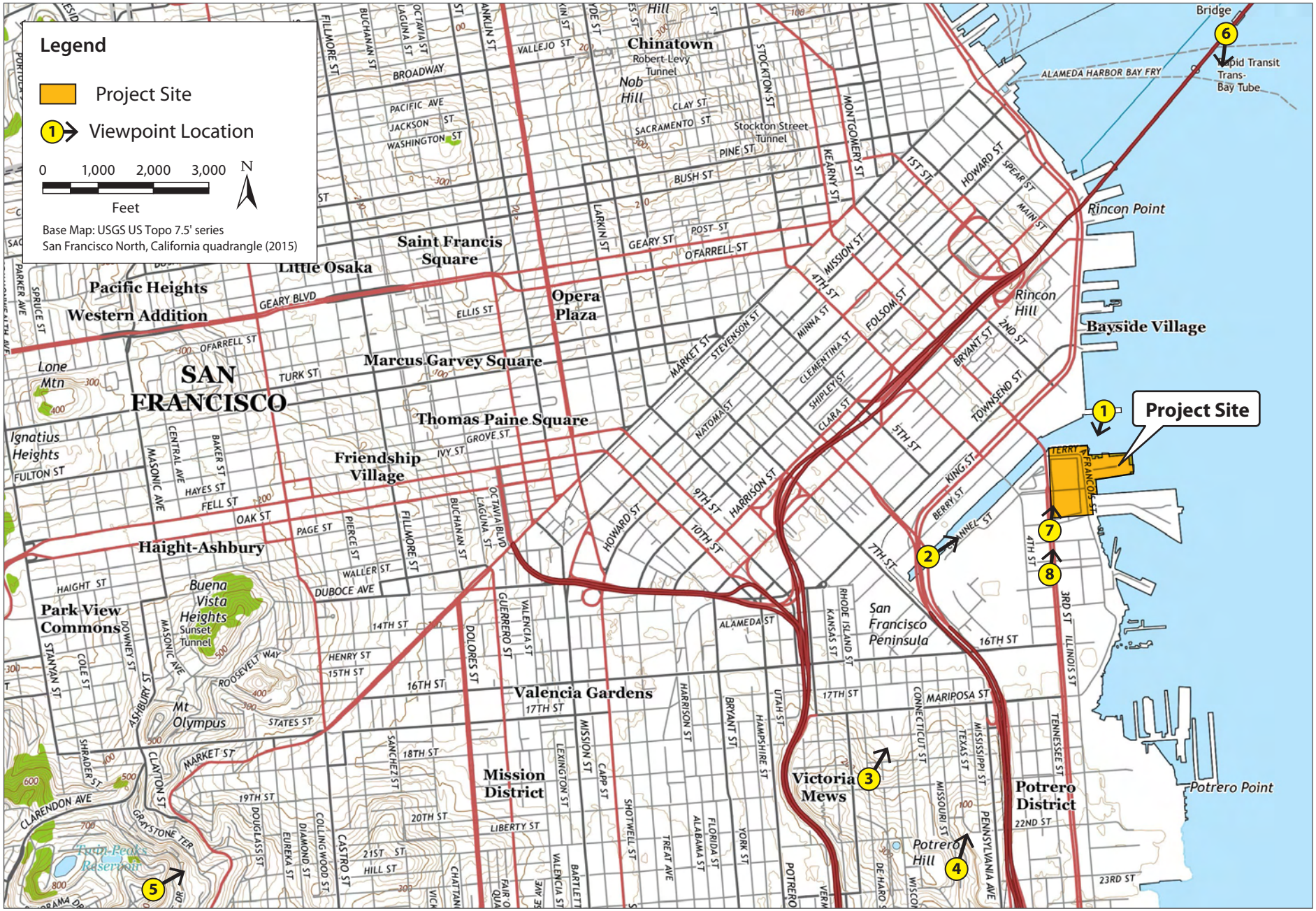
significance criteria, above. Changes to private views resulting from the proposed project would not be considered to be substantially degrading to the existing visual character of the environment because they would not affect the public at large.

Potential impacts on aesthetic and visual resources due to the proposed project are evaluated below, based on a review of photographs and project data as well as site reconnaissance. The project site has been photographed from a range of publicly accessible vantage points. Eight representative viewpoints are included in this Draft EIR to show the project site and the surrounding visual context. Photosimulations are used below to depict proposed project conditions. These vantage points are representative viewer locations and include parks, sidewalks, and roads that offer a view of the urban and natural landscapes that make up the viewsheds.

Figure 4.B-1 (page 4.B-22) shows the eight locations from which photographs were taken; these views are used to depict visual simulations of the proposed project.

- View 1: AT&T Park/Bay Trail, looking southwest (Figure 4.B-2, page 4.B-25)
- View 2: I-280 (above Mission Channel), looking northeast (Figure 4.B-3, page 4.B-26)
- View 3: Potrero Hill neighborhood, looking northeast (Figure 4.B-4, page 4.B-28)
- View 4: Potrero Hill Recreation Center, looking northeast (Figure 4.B-5, page 4.B-29)
- View 5: Twin Peaks, looking northeast (Figure 4.B-6, page 4.B-32)
- View 6: Bay Bridge (western span), looking southeast (Figure 4.B-7, page 4.B-33)
- View 7: Third Street (at Mission Rock Street), looking north (Figure 4.B-8, page 4.B-40)
- View 8: Third Street (at Mission Bay Boulevard South), looking north (Figure 4.B-9, page 4.B-42)

Figures 4.B-2 through 4.B-9 present views of existing and proposed project site conditions. While Figures 4.B-2 through 4.B-7 present mid- and long-range views of the project site, Figures 4.B-8 and Figure 4.B-9 present more close-up views of the project site and are used to discuss project impacts on surrounding areas. The existing condition views (denoted on the figures as "existing") represent the baseline visual conditions for the project site and its vicinity. These views include areas around the project site from which the proposed project would be prominent and important public views of San Francisco's cityscape, with the project site visible from notable public vantage points (such as Twin Peaks and the Bay Bridge). Computer-generated photomontages that show the proposed project superimposed within the existing visual setting (denoted on the figures as "proposed") are presented as part of the figure. The photomontages appear on the same page as the view of existing conditions,



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Figure 4.B-1
Visual Simulation Viewpoint Locations

allowing the reader to compare existing views with photosimulations of the proposed project within the visual context of the project. However, it is important to note that the site plans and photosimulations for the proposed project are for purposes of this analysis; the building envelopes are flexible and have not yet been precisely determined. The exact architectural detailing, coloring, and surface treatments have not yet been developed. Although these details are currently unknown, the maximum square footage, the number of buildings, and the heights have been established and are evaluated as proposed in this section. Therefore, any changes to orientations or the locations of buildings within the parcels would not result in a change to the conclusions presented in this section or a substantial change in views.

LAND USE ASSUMPTIONS

This analysis considers the potential range of development that could occur under the High Commercial Assumption (refer to Figure 2-7 in Chapter 2, *Project Description,* page 2-33) and the High Residential Assumption (refer to Figure 2-8, page 2-34). Both development assumptions fall within the height limits allowed under the Mission Rock Height and Bulk District, as prescribed under Section 291 of the Planning Code (refer to Figure 2-4, page 2-21). The two land use assumptions would have the same visual appearance (e.g., building footprints, street layouts, park modifications, etc.), except buildings on Blocks H, I, and J could be up to 30 feet taller under the High Residential Assumption than under the High Commercial Assumption. Therefore, to provide a conservative analysis, the visual simulations depict the High Residential Assumption, the scenario with taller buildings and also assume the maximum volumes or massing for those buildings. However, it should be noted that for most viewpoints, the buildings on Blocks H, I, and J are not visible; therefore, for those viewpoints, both land use development assumptions are analyzed as the "proposed project." Where the differences between the assumptions are perceptible, this is noted in the analysis.

IMPACTS AND MITIGATION MEASURES

Impact AE-1. The proposed project would not have a substantial adverse effect on a scenic vista. (Less than Significant)

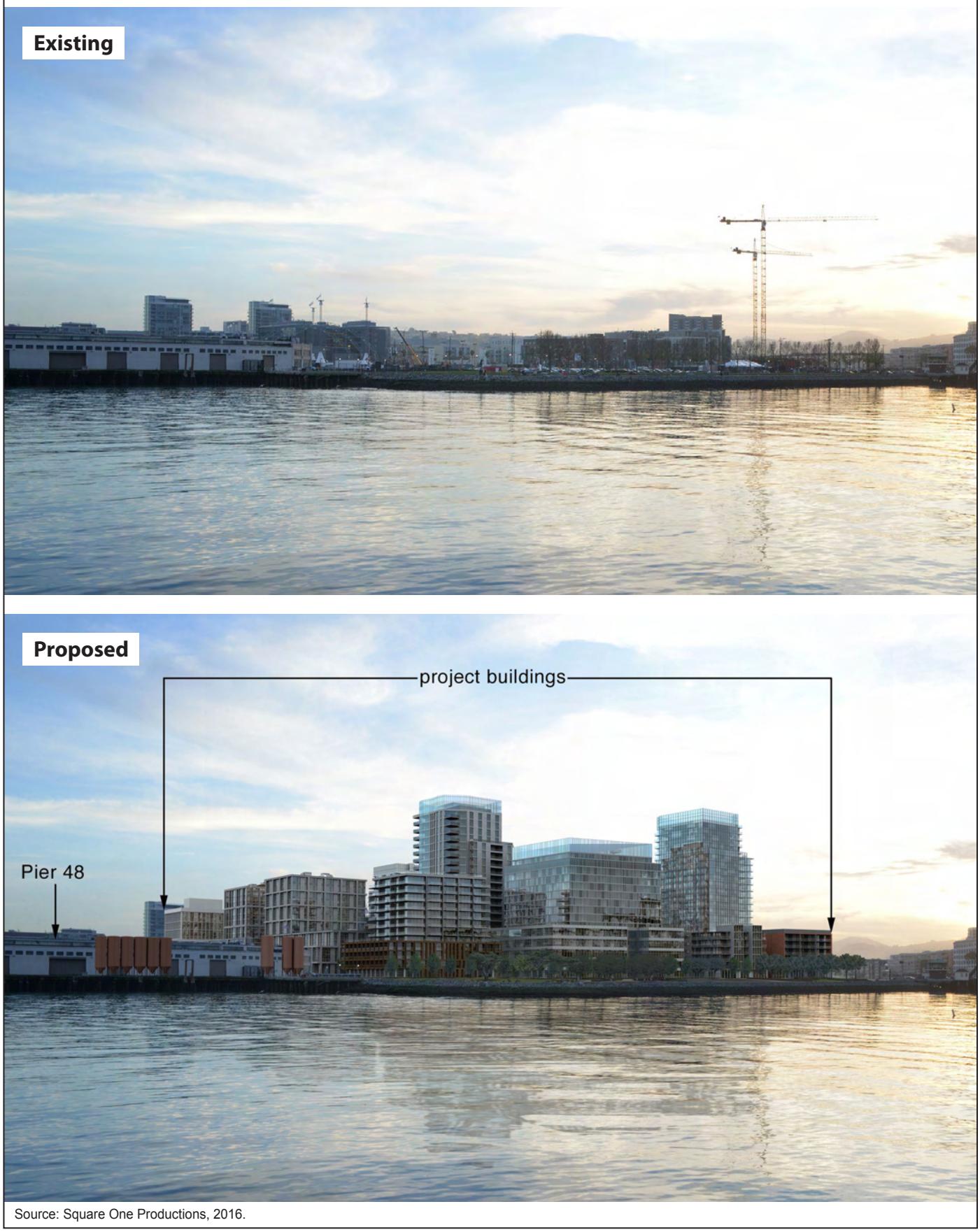
As described above, a scenic vista is a vista from a public location with high visual quality, including harmonious, visually interesting, and broad views. In the areas surrounding the project site, the locations from which scenic vistas could be affected by the proposed project are the Bay Trail, I-280, the Potrero Hill neighborhood, Potrero Hill Recreation Center, Twin Peaks, and I-80. These locations offer expansive views of the natural setting of the Bay, the Santa Cruz Mountain Range, Yerba Buena Island, Treasure Island, and the East Bay Hills. In addition, these locations include views of notable architectural features, such as AT&T Park and the Bay Bridge. Viewers who use these scenic vistas can be considered sensitive viewers because they are generally aware of their surroundings.

Views from the Bay Trail (View 1). As shown in existing View 1, the project site is visible in the middle ground from the Bay Trail near AT&T Park (Figure 4.B-2 on the following page), facing south across China Basin. In particular, the trees in China Basin Park and Pier 48 are visible. Beyond the project site, development in Potrero Hill and on the Twin Peaks ridge is fairly visible over the existing buildings in Mission Bay.

As depicted in Figure 4.B-2, with implementation of the proposed project, foreground, middle ground, and background views would be altered. Within the foreground view, several silos would be added to the north side of Pier 48, blocking some of the view of Pier 48 from AT&T Park/Bay Trail. Also, the proposed buildings, which would be up to 240 feet in height (with up to approximately 20 feet [40 feet on Block F] above rooflines), would be visible from the Bay Trail immediately across from China Basin. The flexible development blocks (H–J) would be visible from this location, but this would not block additional views from the Bay Trail. Under the proposed project, the taller structures would block the majority of the views of development within Mission Bay, block all views of Potrero Hill, and decrease views of Twin Peaks. Views from the Bay Trail near AT&T Park generally focus on areas away from the project site and more toward the north and east where the views encompass the panoramic and expansive scenery of the Bay, Bay Bridge, and East Bay Hills. Because of flat terrain, distance, and development in Mission Bay, south-facing views toward the project site are not as remarkable as those facing north and east. The proposed project would not block the majority of scenic views as seen from the Bay Trail near AT&T Park.

Views from I-280 (View 2). Elevated views toward the project site and surrounding Bay Area are available from northbound I-280. As shown in existing View 2 (Figure 4.B-3, page 4.B-26), views of the Bay and East Bay Hills from I-280, approximately 0.5 mile west of the project site, are limited and available mostly from the freeway, looking down the Mission Creek channel. This narrow view corridor includes views of the surface parking lot at the project site and the trees in China Basin Park. As seen in the existing view, buildings located south of Mission Creek that are closer to the Bay are shorter (five to eight stories) than the buildings located closer to the freeway (14 to 17 stories). The shorter stature of the buildings helps retain some views of the tops of the East Bay Hills and provides a visual transition from the increasing heights closer to the freeway to the decreasing heights closer the Bay's shoreline.

As depicted in proposed View 2 from I-280 (Figure 4.B-3), with project impacts, some of the proposed buildings would be visible. The taller structures on Blocks A, G, and F would obscure views of Blocks H–K, regardless of the land use development assumption, and the existing high-rise development in Mission Bay would block views of the proposed buildings located on the southern portion of the project site. Existing development would also prevent most views of the lower levels of the proposed buildings throughout the project site, as seen from this segment of I-280. Along this



Source: Square One Productions, 2016.

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Figure 4.B-2
View 1 — View from AT&T Park/Bay Trail Looking Southwest





Source: Square One Productions, 2016.

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Figure 4.B-3
View 2 (Daytime) — View from I-280 Looking Northeast

corridor, the proposed buildings would not appear to be taller than existing development along Mission Creek, closer to the freeway. However, at up to 240 feet (approximately 23 stories), the proposed project would be taller than the existing development adjacent to the project site.

Although not fully designed, it is anticipated that the proposed architectural detailing, coloring, and surface treatments would be consistent with the existing development surrounding the site and would not stand out as being visually obtrusive within this vista. The primary change in the view resulting from the proposed project is that the proposed buildings would constrict views of the Bay's inlet to Mission Creek, portions of the South Beach Harbor Marina, and some the East Bay Hills. However, Mission Creek, AT&T Park, and a segment of the East Bay Hills would continue to be visible from this location.

As discussed above, I-280 is an eligible State Scenic Highway (although not officially designated),[20] is part of the 49-Mile Scenic Drive,[21] and is identified in the general plan as having important views. However, the view from I-280 is not considered sensitive. This highway is highly traveled, and motorists have only fleeting views of the Bay and East Bay Hills because of the permitted speed. In addition, the attention of motorists is generally focused on the road ahead. It is not expected that it would be focused on the proposed buildings on the project site. Passengers, however, would have fleeting views of the Bay and East Bay Hills.

Potrero Hill Neighborhood (Views 3 and 4). As shown in existing Views 3 and 4 (Figures 4.B-4 and 4.B-5 on the following pages), local roadways and parks on Potrero Hill include middle ground views of the project site. These include views to the city, the East Bay, Yerba Buena Island, the Bay Bridge, the San Francisco Peninsula (Peninsula), and the Santa Cruz Mountains. From these elevated vantage points, the high-rise buildings of the San Francisco Financial District are visible next to the southern span of the Bay Bridge and Yerba Buena Island.

As shown in proposed View 3 from the Potrero Hill neighborhood (Figure 4.B-4), which has middle ground views of the project site, intervening development would obscure views of the lower portions of the proposed project buildings from this vantage point. In addition, the proposed taller structures associated with Blocks A–G and existing development would obscure most views of Blocks H-K; however, the upper portions of the proposed towers associated with Blocks H and I would be visible. In addition, as seen in the existing view, development of variable heights is common in the project vicinity and neighboring portions of the city. Therefore, although the heights of the buildings at the project site would vary, this is generally

[20] California Department of Transportation. 2016. *Scenic Highway Program, List of Eligible and Officially Designated State Scenic Highways*. Last updated: March 16, 2016. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm. Accessed: May 2, 2016.

[21] San Francisco To Do. 2012. *49-Mile Scenic Drive Map*. Last updated: 2012. Available: http://www.sftodo.com/maps/49-mile-scenic-drive-san-francisco.pdf. Accessed: May 6, 2016.



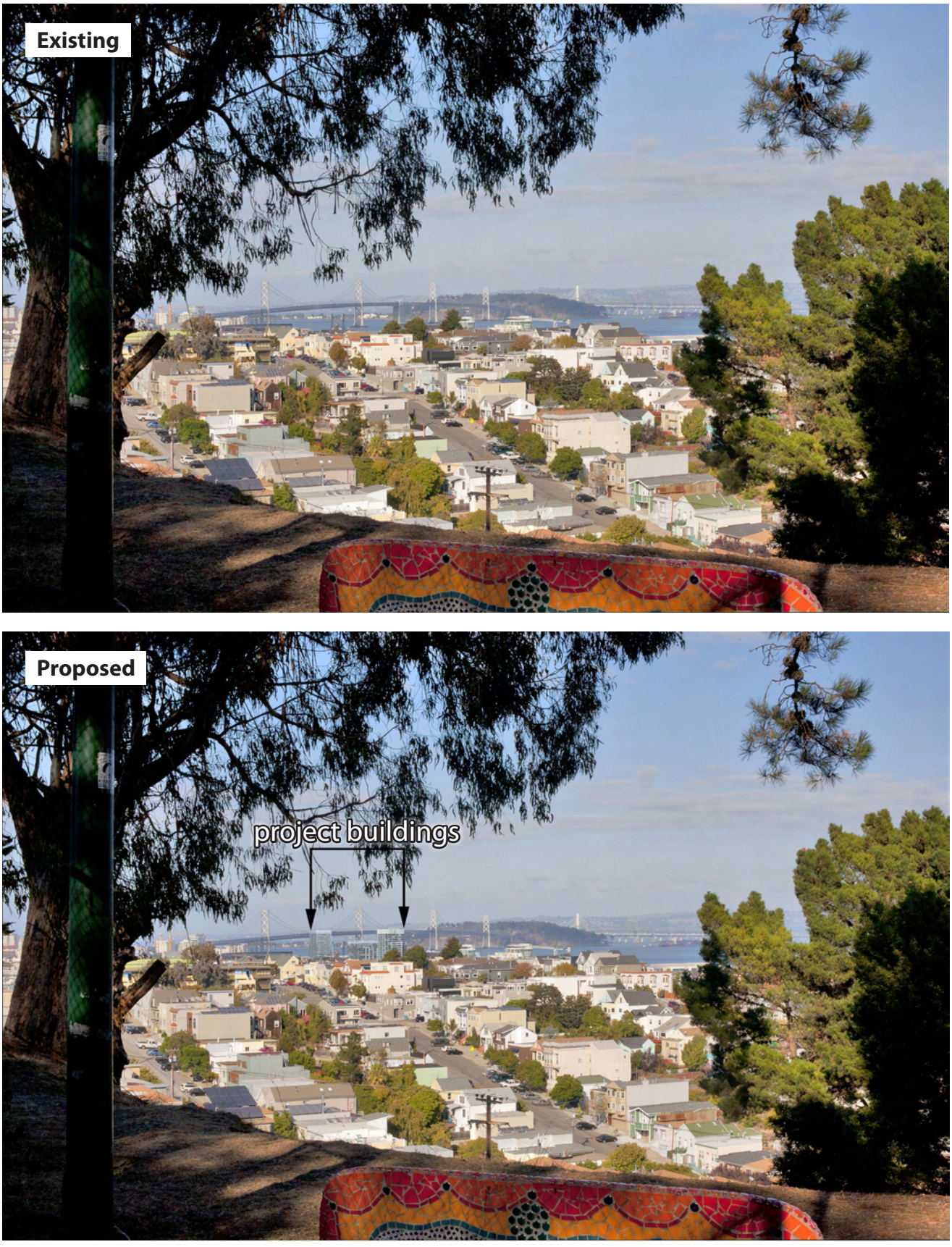


Source: Square One Productions, 2016.

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Figure 4.B-4
View 3 — View from Potrero Hill Neighborhood Looking Northeast



Source: Square One Productions, 2016.

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Figure 4.B-5
View 4 — View from Potrero Hill Recreation Center Looking Northeast

characteristic of the cityscape as seen in this scenic vista. The proposed buildings on Blocks A, C, D1, G, and F would be perceivably taller than the existing development immediately surrounding the site within this scenic vista. This would create a peak in building heights seen from View 3 under proposed conditions compared to existing conditions. As shown in the view of existing conditions, the building heights currently allow for fairly comprehensive views of the Bay, Bay Bridge, Yerba Buena Island, and the East Bay Hills. As shown in the proposed view, the project buildings would constrict views of these features, resulting in visual obstruction of portions of the Bay, reduced and segmented views of Yerba Buena Island and the eastern span of the Bay Bridge, and slightly reduced views of the East Bay Hills.

As shown in proposed View 4 from Potrero Hill Recreation Center, at 801 Arkansas Street (Figure 4.B-5, on the previous page), which also has middle ground views of the proposed project, intervening development would obscure views of the lower portions of the proposed buildings on the project site from this vantage point. Only the upper portions of the towers associated with Blocks A, C, and D1 (which can be seen in Figure 2-4 in Chapter 2, *Project Description*) would be visible; the upper portions of the Block F tower would not be seen behind the Block D1 tower. Portions of Blocks H–K would be visible from Potrero Hill; however, the difference between the two land use assumptions would not be perceivable from this distance.

Under existing conditions in View 4, the Bay, Bay Bridge, Yerba Buena Island, Treasure Island (seen below the western span of the Bay Bridge), and the East Bay Hills are focal points of existing views. As shown in the proposed view, the proposed buildings would partially limit views of these features. Views of Treasure Island would be reduced, some of the middle portions of the western span of the Bay Bridge would be hidden up to the deck level and segmented, and Bay views would be slightly reduced. In addition, the proposed project would result in a visual interruption by creating a smaller focal point that would disrupt the continuous nature of the Bay Bridge as it spans the Bay from Yerba Buena Island. However, the proposed buildings would not substantially affect the vista from the Potrero Hill neighborhood and the recreation center because of the distance from the viewers to the project site and the superior position of the viewers relative to the project site. The project site is located more than 1 mile northeast of the Potrero Hill neighborhood and its recreation center. Therefore, intervening structures and the built-out urban nature of the city would block and detract from the majority of views of the proposed buildings. In addition, the neighborhood and recreation center currently include an expansive view of city development, including the high-rise buildings in the Financial District and South of Market, the Bay, the Bay Bridge, and the East Bay Hills, features that would continue to be visible with project implementation. The proposed buildings on the project site would be only a minor element of this view and would not substantially alter views from this vantage point.

Views from Twin Peaks (View 5). Existing long-rang views from Twin Peaks encompass expansive city development, the Bay, the East Bay Hills, Yerba Buena Island, and the Bay Bridge. From this elevated vantage point, the high-rise buildings of the San Francisco Financial District are visible next to the southern towers of the Bay Bridge and Yerba Buena Island. As shown in the proposed View 5 from Twin Peaks (Figure 4.B-6 on the following page), which has middle ground views of the proposed project, existing development would obstruct views of the lower levels of the proposed project buildings. Development of variable heights is common in the project vicinity and neighboring portions of the city, as seen in the existing view, with a concentration of taller buildings in the Financial District and South of Market. These buildings, development in the East Bay, the East Bay Hills, and the Bay are the focal points of this vista.

The variable heights and form associated with the proposed project are characteristic of the cityscape seen in this vista. The form and character (e.g., architectural detailing, coloring, surface treatments) of the proposed project is not expected to interrupt the existing focal points associated with this view. The proposed project would not be visually apparent or notable within the view, given the expansive nature of this vista. In addition, there would not be a notable difference between the two land use assumptions.

Views from I-80/Bay Bridge (View 6). Similar to views associated with View 5, scenic vistas from westbound I-80 on the Bay Bridge (Figure 4.B-7, View 6, page 4.B-33) would not be greatly affected by the proposed project. Existing scenic vistas from the Bay Bridge are expansive and offer direct, unobscured views of the city's port areas, the project site, urban development associated with the city, John McLaren Ridge, San Bruno Mountain, and the Santa Cruz Mountain Range. Within this view, focal points include the Bay, port areas, the cityscape, hillsides back-dropping the city, and immediate views of the Bay Bridge towers and cabling. Development of variable heights is common in the project vicinity and neighboring portions of the city, as seen in the existing view. The variable heights and form associated with the proposed project are similar to the cityscape seen in this vista and appear to be a continuation of the variable heights and forms seen with existing development located along the shoreline between I-80 and Mission Creek. The form and character of the proposed project would not interrupt the existing focal points associated with this view. Although visible, the proposed buildings would not stand out as a notable, independent visual feature. Given the distance between this viewpoint and the project site, any differences in appearance between the High Residential Assumption and the High Commercial Assumption would not be perceptible.



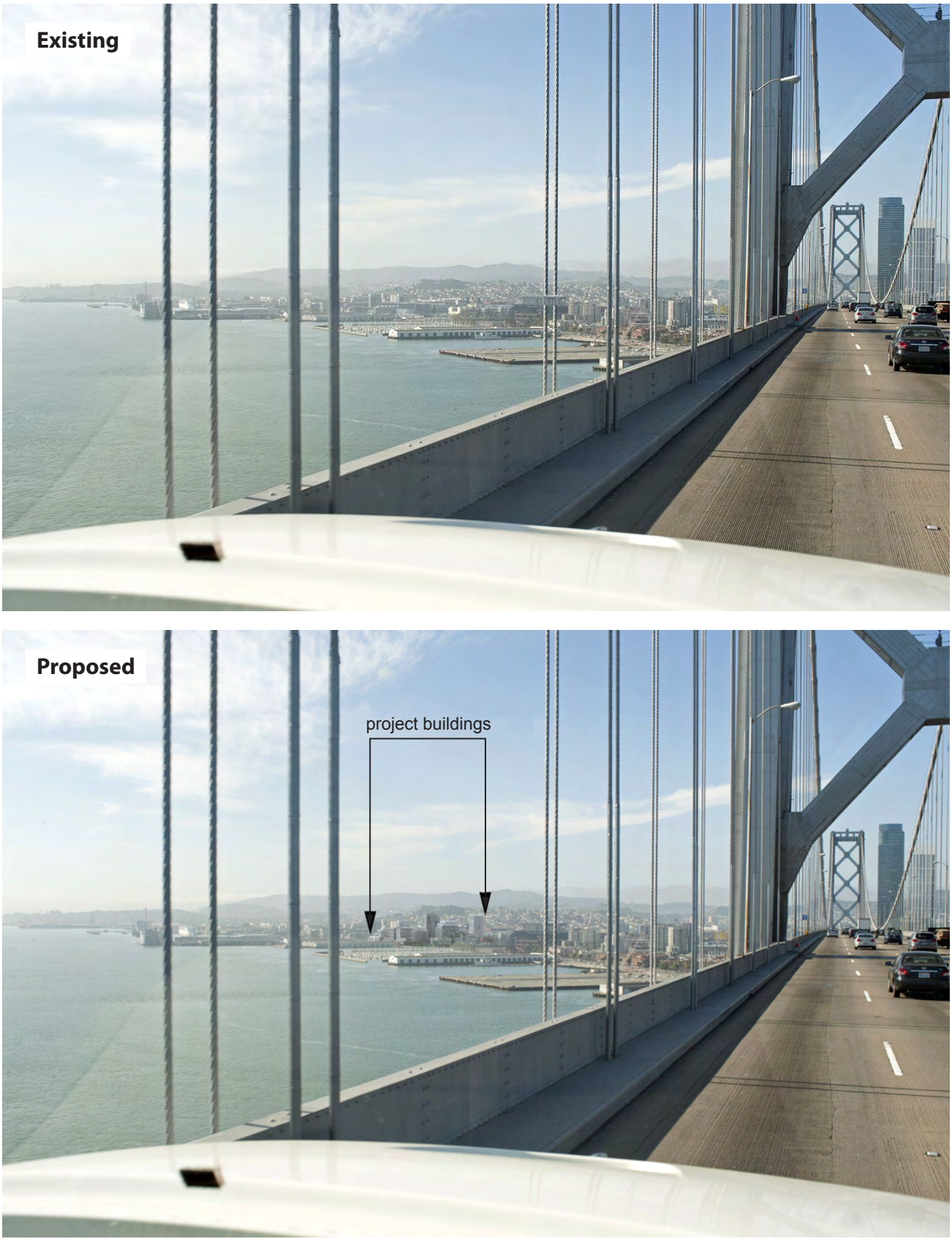


Source: Square One Productions, 2016.

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Figure 4.B-6
View 5 — View from Twin Peaks Looking Northeast



Source: Square One Productions, 2016.

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Figure 4.B-7
View 6 — View from the Bay Bridge Looking Southeast

Other Views. The tops of the proposed buildings could be partially visible from other surrounding locations in the city, such as local streets; however, none of these areas afford scenic vista views. In addition, views of the project site from the East Bay would not be affected by the proposed project because of the distance. In such views, the form and character of the proposed project would not stand out as a notable, independent visual feature from across the Bay.

Overall Impacts on Scenic Vistas. As explained above, the proposed project would result in additional height, bulk, and massing from development of the proposed buildings on the project site. However, the increased development would represent a small portion of the overall urban vista, as viewed from the Potrero Hill neighborhood, Potrero Hill Recreation Center, Twin Peaks, and I-80. From these locations, except for views from I-80, the lower levels of the proposed buildings would be blocked by existing intervening development. The upper levels of the proposed buildings would be visible and, in the case of views from the Potrero Hill Recreation Center and the Potrero Hill neighborhood, would block portions of the existing view of Yerba Buena Island, the Bay Bridge, or both, although these landmarks would still remain partially visible. Overall, from these locations, the proposed project would appear as one element within the surrounding expansive urban development. In addition, views for motorists and their passengers on I-80 and I-280 are momentary, providing, at best, brief opportunities to view scenic vistas. Although the proposed development would block a portion of the view of the East Bay Hills from I-280, existing development in Mission Bay already blocks the East Bay view from this location, and portions of the East Bay Hills would still be visible with project development. The proposed buildings would be highly visible from the AT&T Park/Bay Trail looking southwest and block views of Potrero Hill and Twin Peaks. The silos at Pier 48 would also be visible from this location but would not block views. However, viewers in this vista are more likely to focus on views to the north and east, areas where the views encompass the Bay, the East Bay Hills, and the Bay Bridge. Views to the southwest from this location are of a fairly flat terrain, with buildings in the distance across from China Basin and hills in the city still farther away. In the future, development of buildings of varying heights would be visible immediately across from China Basin rather than the flat terrain and distance hills; however, this view in the future would very likely be similar to the current view of the immediately surrounding urban development to the west in Mission Bay North.

As noted above, the proposed project buildings would be consistent with the height and bulk requirements set forth in Section 291 of the Planning Code for the Mission Rock Height and Bulk District. The Design Controls would serve as a guide to proposed development with respect to bulk, massing, setbacks, and other physical design and use aspects of the development. Implementation of the Design Controls would ensure that the proposed buildings would blend into the fabric of the existing neighborhood and include a design that would

encourage shared architectural elements and rhythms. Examples of guidelines or standards from the Draft Design Controls (on page 158) of how this would be accomplished include, but are not limited to, the following:

- Breaking down the mass of the buildings into several smaller masses. Massing changes should relate to the overall building design, design of the upper building, and other prominent building elements such as fenestration patterns and building entries.
- The length of streetwalls should be varied and articulated to create interest and diversity of experiences, forms, and materials along public ways. Variety is sought to avoid repetitive or oversized buildings and provide visual interest.
- Provide relationship between upper and base portions of buildings to give a sense of the upper building coming to the ground. A similar palette of materials, colors, and fenestration should continue from the upper building to the base building to create a unified composition.

Although the proposed project would add height, bulk, and massing at the project site, this change would not result in a significant impact on a scenic vista. Therefore, based on the above discussion, this impact would be ***less than significant***.

Impact AE-2. The proposed project would not have a substantial adverse effect on a scenic resource. (Less than Significant)

As discussed above, Pier 48 is considered to be part of a scenic resource because it is a contributory resource to the Embarcadero Historic District. The Embarcadero Historic District is listed in the National Register and includes 24 contributing buildings and 26 contributing structures. Under the proposed project, the Pier 48 aprons and sheds would be rehabilitated to restore the structural integrity of these features. Improvements would comply with the Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (the SOI Rehabilitation Standards and the SOI Guidelines, respectively) and the Port Guidelines, which would result in the preservation and enhancement of the aesthetic character of the pier shed architecture.

No exterior expansion of the Pier 48 shed structures would occur. Exterior modifications would be limited to refurbishing existing windows; installing door systems, storefront windows within existing roll-up door openings, and potential new windows; and refurbishing certain areas of the roof. The proposed project would include the installation of a lightweight temporary canopy over a portion of the open-to-sky valley area, minor loading area modifications, and installation of approximately 10 removable grain and yeast silos, up to 50 feet tall, within the valley and north of Shed A at the north apron. Entry signage on the building façade would be recessed to preserve the historic integrity of the sheds. Changes to the roof would limit penetrations to accommodate new flues, vents, and potentially south-facing photovoltaic cells. The added silos

in the valley and the temporary canopy would be lower than the midpoint of the sloping roof and would not be visible above the Pier 48 roofline. An outdoor beer garden would be located north and west of Shed A in a partially enclosed open-air area.

In general, the only noticeable changes to Pier 48 would be the proposed signage and those features surrounding the structure, such as the proposed silos and the outdoor beer garden. Exterior signage on the building façade would be recessed to preserve the integrity of the Pier 48 sheds, and all historic ornamentation and signage, as well as the two flagpoles on the bulkhead buildings, would be retained and preserved. The beer garden could include features such as temporary seating, heating lamps, or screens, all of which would be removable and developed consistent with Secretary of the Interior's Standards for Treatment of Historic Properties to ensure that the integrity of Pier 48 would be maintained. For further discussion of compliance with these standards, refer to Section 4.D, *Cultural Resources*. All other renovations would be limited mainly to the interior. Therefore, because most of the changes at Pier 48 would be on the interior and not visible from the outside, the proposed exterior additions would not result in substantial changes to the visual character of Pier 48. In addition, the majority of Pier 48 historic materials would be preserved and rehabilitated according to the SOI Rehabilitation Standards, SOI Guidelines, and Port Guidelines. Therefore, the Embarcadero Historic District as a whole would still be able to convey its significance as a historical and scenic resource. The impact of the proposed project on scenic resources is considered ***less than significant***.

Impact AE-3. The proposed project would not have a substantial adverse effect on the visual character or quality of the site and its surroundings. (Less than Significant)

For the purposes of this analysis, a substantial adverse effect on existing visual character or quality would occur if the proposed project were to introduce a new visible element to the area that would be inconsistent with the overall quality, scale, and character of the surrounding development. The analysis considers the degree of contrast between existing and proposed features that represent that area's valued aesthetic image, in addition to the degree to which the proposed project would contribute to the area's aesthetic value. This analysis examines the changes in visual character and quality at the project site itself and how the proposed project would change existing visual character and quality as seen from surrounding areas.

CONSTRUCTION

Currently, the project site is an open parking lot, except for Pier 48, China Basin Park, and pop-up retail on the parking lot. The proposed project would introduce construction activities to viewsheds that are available to all viewer groups (residential, commercial, visitor, etc.). Although changes to the visual quality of the project site would be temporary (i.e., during the

construction period), the impacts would occur over a period that could last 6 years or more.[22] Ground-level views of construction activities would be visible primarily from areas immediately adjacent to the project site, with direct views of security fencing and barriers surrounding the project site. Beyond these locations, ground-level views of construction would be obscured by terrain and development surrounding the project site. However, construction activities would become more apparent as the structures are erected. Viewers would be able to see construction workers, ground disturbances, heavy equipment, and associated vehicles such as backhoes, compactors, tractors, and cranes that would construct foundations and supports, erect the structures, and apply surface finishes and architectural detailing. These heavy construction activities would occur close to nearby viewers, both at the ground level and elevated off the ground (i.e., within the mid- to upper stories of existing buildings). Construction may also require nighttime lighting to operate in the dark.

Construction is anticipated to be completed over about four phases, and these phases would appear as a visual continuation that would transition across the site over 6 years or more. However, the majority of viewers in the vicinity are accustomed to seeing heavy machinery, construction fencing and signage, and construction activities related to redevelopment of Mission Bay over the past decade. Therefore, although construction would occur over an extended period of time, the proposed construction would be typical of larger city projects and projects within Mission Bay. The resulting visual conditions would be consistent with existing visual conditions within the project vicinity, resulting in ***less-than-significant*** impacts.

OPERATION

Impacts on Onsite Character. The proposed project would increase onsite building heights and the density of development. Currently, the project site consists of a paved surface parking lot (Lot A) for approximately 2,170 vehicles, pop-up retail, Pier 48, and China Basin Park. Except for the park, the project site does not include vegetation; the majority of the project site consists of urban and paved features in a human-made environment. The proposed project would add landscaping, bicycle/pedestrian connections and amenities, and modern buildings to the project site. The proposed project's approximately 8 acres of new and expanded open spaces would include China Basin Park, Mission Rock Square, Channel Wharf, Channel Lane, Waterfront Promenade, pedestrian paseos, and new public access on the apron of Pier 48. The parks would be connected to a new pedestrian-oriented street network, including the pedestrian-privileged Shared Public Way, which would connect China Basin Park to Long Bridge Street and areas south of the project site. These areas would also provide access to the City's proposed Blue

[22] The proposed project phasing, as presented in this document, is an estimate, providing the most conservative scenario. The phasing of project implementation would be subject to change due to market conditions and other unanticipated factors and could extend beyond 2023.

Greenway and the planned Bay Trail. As appropriate, the project would be designed to be consistent with the BCDC Bay Plan and Public Access Design Guidelines, discussed above under *Regulatory Framework*.

The proposed expansion of the existing China Basin Park to 4.4 acres (an expansion of 2.2 acres) would include a range of activities that would be connected to a waterfront promenade and offer waterfront access and views. China Basin Park would serve to connect the northern waterfront[23] open space network via the Blue Greenway to the existing or planned central waterfront[24] open space networks of Mission Bay, Pier 70, Hunters Point, and Candlestick Point to the south. The expansion of China Basin Park would provide greater access to open space at the project site. As discussed above, recreational opportunities associated with the park and the Waterfront Promenade would most likely increase the number of viewers at the park and provide for improved scenic urban views of China Basin, AT&T Park, and surrounding urban development as well as the scenic vista views of the Bay, Bay Bridge, and East Bay Hills. The viewer experience at the expanded China Basin Park and surrounding scenic vista views would be enhanced by improved park conditions and the creation of the Waterfront Promenade.

The project would include a tree planting plan for the entire project site, including parks, consistent with the proposed landscape plan and Design Controls (to be approved with the project entitlements). For example, street trees and open space trees would be an element of the Mission Rock master tentative map and would be installed with each phased final map and adjacent streetscape and open space improvements. Per the Design Controls, trees could be native or climate adapted, ranging in height at maturity from 30 to 60 feet. These could include species such as Monterey cypress, New Zealand Christmas tree, red-flowering gum, Chinese elm, strawberry tree, southern live oak, ginkgo, freeman maple, Brisbane box, red oak cultivar, Victorian box, California pepper, cork oak, or melaleuca. Native or climate-appropriate grasses, shrubs, and ground cover would also be planted. Permanent public art pieces would be located in China Basin Park, Mission Rock Square, and Channel Wharf. In addition, stormwater treatment gardens[25] would be integrated within the programmatic land uses.

Although the visual simulations are conceptual and the architectural details have not yet been designed, it is expected that the proposed buildings would not stand out as being visually obtrusive. In addition, as noted above, the proposed project would further increase available open space areas through the creation of Mission Rock Square, Channel Lane, and Channel Wharf. These features would create a valuable amenity that would provide a visual reprieve

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[23] The northern waterfront extends from Pier 45 at Fisherman's Wharf to AT&T Park along China Basin.

[24] The central waterfront starts at Mission Bay and ends at Islais Creek.

[25] Stormwater treatment gardens function as soil- and plant-based filtration devices to remove pollutants in runoff through a variety of physical and biological treatment processes.

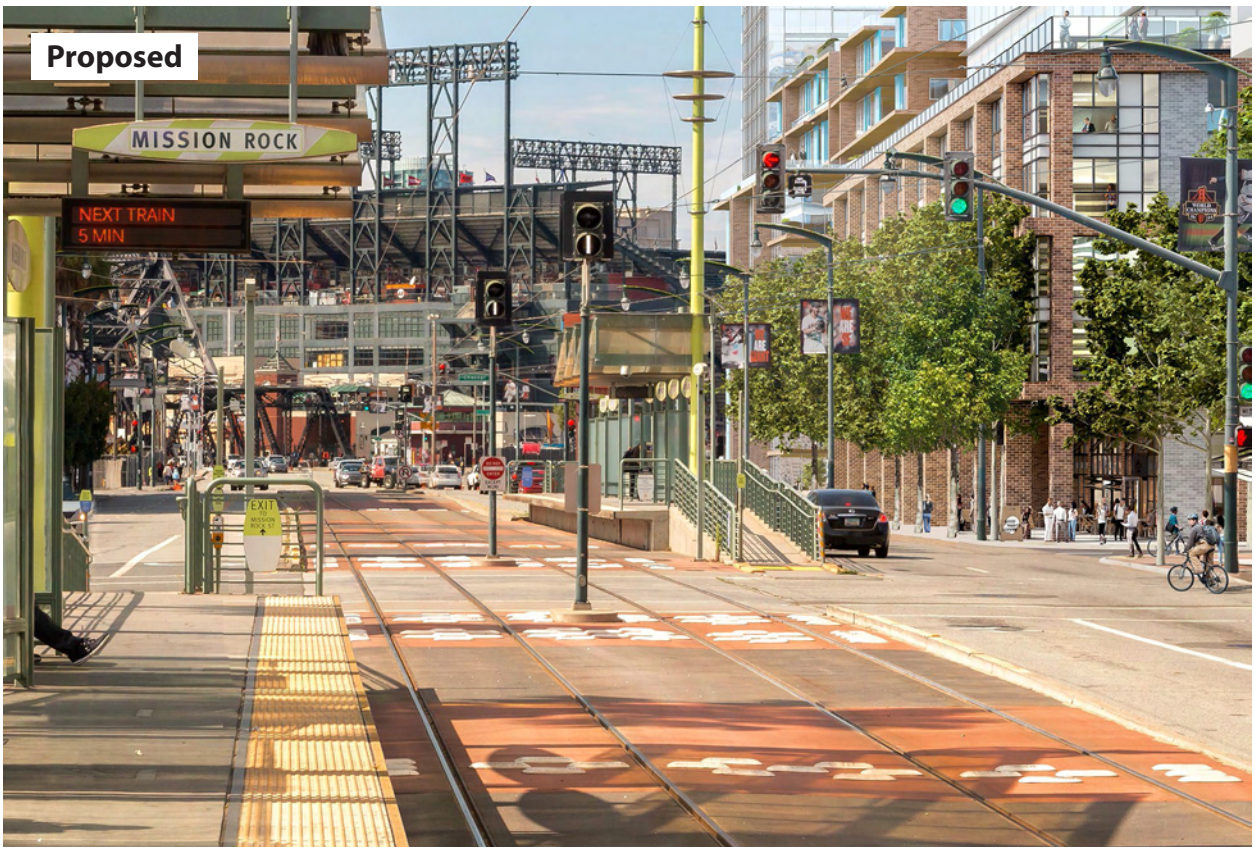
within a dense urban setting. Other than from China Basin Park, ground-level scenic vista views from the project site are limited but available when looking north and east toward the Bay from Terry A. Francois Boulevard in locations where there is little to no foreground development to obscure views (i.e., near China Basin Park, between Piers 48 and 50, and near China Basin Street). Under the proposed project, Terry A. Francois Boulevard would terminate at the expanded China Basin Park. Channel Wharf (between Piers 48 and 50), the Blue Greenway, and the Waterfront Promenade would extend onto the project site. These new features would preserve ground-level scenic vista views from the project site. The resulting onsite character would be consistent with existing visual conditions in the project vicinity, resulting in ***less-than-significant*** impacts.

Impacts on the Surrounding Areas. Development at the project site would substantially increase building height, mass, and bulk compared to existing conditions; however, all height and bulk limits were approved by the voters with the passage of Proposition D in 2015. Buildings in Mission Bay are limited in height to 160 feet, while all Mission Bay development adjacent to Terry A. Francois Boulevard is limited in height to 90 feet. Existing buildings located south of Mission Creek that are closer to the Bay are shorter (five to eight stories) than buildings located farther east, closer to I-280 (14 to 17 stories). The 11 blocks on Seawall Lot 337 could be developed with building heights ranging from 90 feet (approximately seven stories) to a maximum of 240 feet (approximately 23 stories) for the tallest building, excluding mechanical and other accessory penthouse roof enclosures. The tops of upper buildings (towers) may extend up to 20 feet (40 feet on Block F) vertically above the maximum designated building height. These nonhabitable area elements, or wall extensions, would screen rooftop mechanical systems and allow for greater building differentiation and architectural expression. Therefore, the proposed project would result in greater height than that of the surrounding area.

The project site would not be substantially visible from most public view corridors, which, as described above, provide views of important features along a path, roadway, or other corridor where the view is confined by obstructions. Views of the project site from surrounding areas are further limited because of the flat topography, distance, and intervening structures and vegetation. As described above in Impact AE-1, the proposed project would be visible from the Bay Trail, I-80, and I-280. The proposed project would also be visible from Third Street, immediately adjacent to the project site, facing east on Channel Street and Long Bridge Street and facing north on Bridgeview Street. These impacts are discussed below.

Views from Third Street. Views from Third Street, facing the project site, encompass regional landmarks (AT&T Park, Yerba Buena Island, the Bay Bridge, and East Bay Hills) that are also considered scenic resources. As shown in View 7 (Figure 4.B-8 on the following page), Lefty O'Doul Bridge, AT&T Park, and the western span of the Bay Bridge are currently visible from the Mission Rock Muni Metro light rail station platform on Third Street (at Mission Rock Street).





Source: Square One Productions, 2016.

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Figure 4.B-8
View 7 — View from Third Street (at Mission Rock Street) Looking North

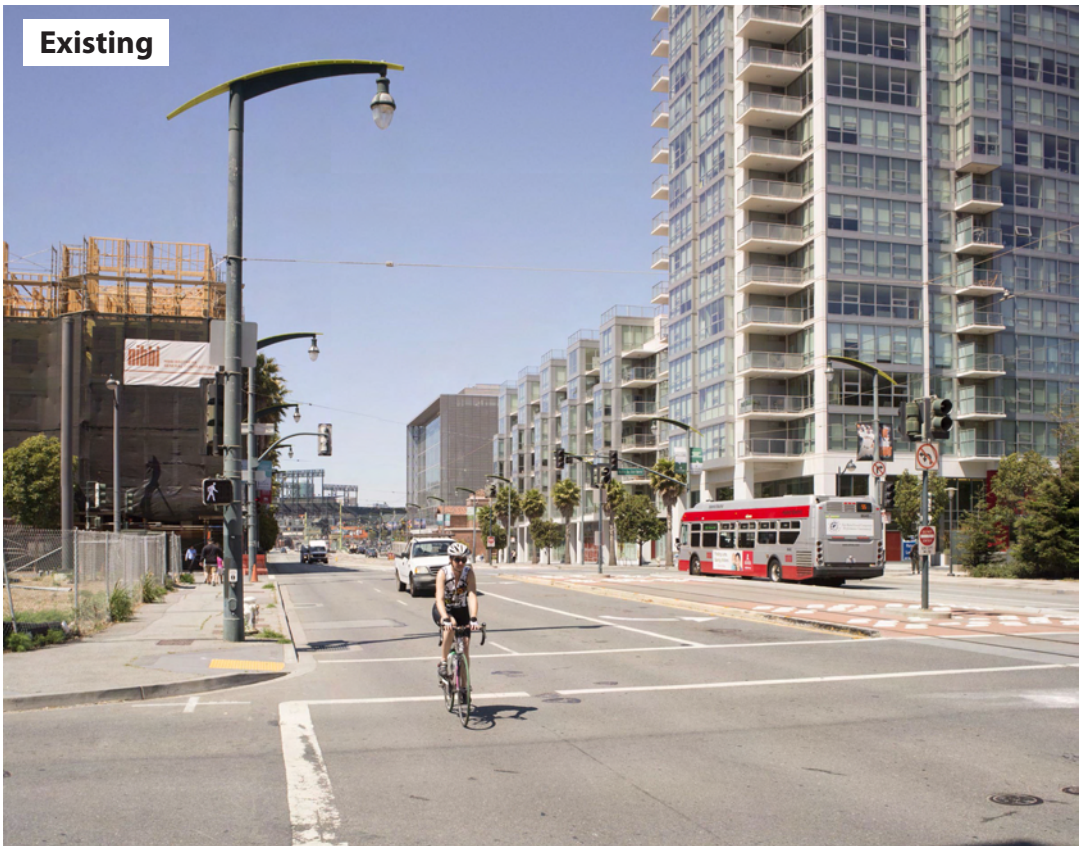
Vertical and horizontal aerial visual intrusions within this existing view currently create visual clutter. Vertical intrusions include train signals, streetlight posts, street signs, light rail shelters, light rail platforms and ramp railings, and green posts that signify light rail stops. Horizontal aerial visual intrusions include roofs on light rail shelters, traffic light arms attached to light posts and overhanging light standards, and crisscrossing overhead electrical contact wires. These intrusions are more apparent in the existing view where they are back-dropped against the sky.

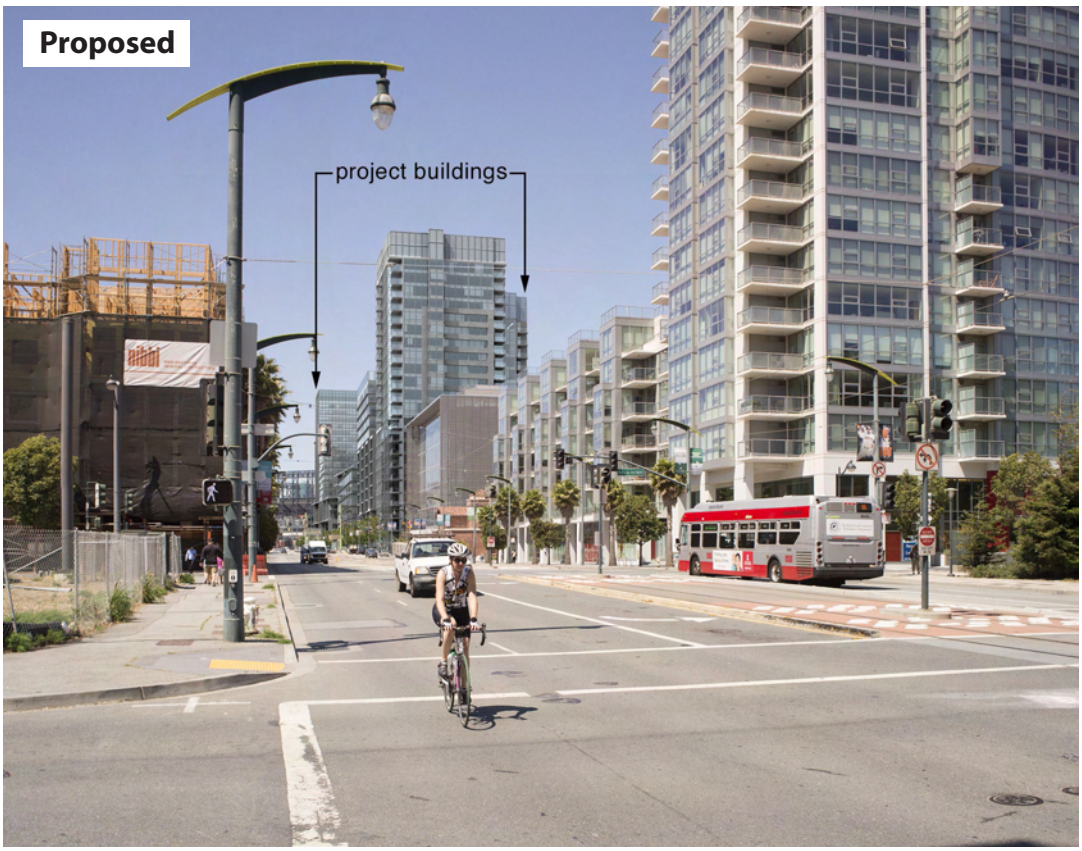
In general, the proposed project would help to reduce the appearance of vertical and horizontal visual intrusions because the intrusions would be back-dropped against darker buildings, allowing them to blend better with the surroundings. The proposed buildings would eliminate a substantial portion of the visible sky, as seen in the existing view; they would also obstruct views of the Bay Bridge's western span and reduce available views of AT&T Park. However, views of the project site are not focal points of the Third Street view corridor, which is dominated instead by dense urban uses, vehicles, public transit, bicyclists, and pedestrians. The proposed project would alter the Third Street view corridor, but it would not deteriorate the view. Further, views of AT&T Park would be partially maintained.

Farther south along Third Street, bordering the project site, views of AT&T Park under existing conditions are still available but are less apparent, as seen in the existing view for View 8 (Figure 4.B-9, on the following page), and the Bay Bridge is not visible because of existing intervening structures. AT&T Park is identifiable, with its sloped seating and stadium lighting. Because of the distance and intervening vertical and horizontal roadway intrusions, the existing buildings lining the street in the immediate foreground are more of a focal point in this view than AT&T Park. As seen in the proposed view, the proposed project would emulate a form and visual character that would be consistent with and complementary to the existing buildings along Third Street. Although a portion of the ballpark would be blocked by the proposed project, the Third Street corridor would appear densely developed and more visually complete with the inclusion of the proposed building, as is expected in dense urban settings.

Views from Other Streets. Views of the proposed project would also be available from the western side of Third Street, along Channel Street and Long Bridge Street, facing east. These streets are in the Mission Bay South Redevelopment Plan area. Objectives and policies of the Mission Bay South Redevelopment Plan (as discussed above) encourage the protection of major views of the Bay, Bay Bridge, and the downtown skyline; visual access to the Bay and the channel of China Basin; and recognition that buildings, open spaces, and view corridors, as seen together, create the character of the neighborhood.

Views from streets in the Mission Bay South Redevelopment Plan area are channelized, meaning that the view corridors have limited lateral visibility because of dense development on both sides of the streets. Regardless, the proposed project would preserve the existing channelized view toward the project site because the proposed project would not alter the





Source: Square One Productions, 2016.

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Figure 4.B-9
View 8 — View from Third Street (at Mission Bay Boulevard South) Looking North

existing street pattern. Both Channel Street and Long Bridge Street would continue in an east–west orientation through the project site. Channel Street would terminate at Mission Rock Square, and Long Bridge Street would continue to Terry A. Francois Boulevard, allowing unobstructed channelized views of Pier 50 through the project site. Bridgeview Street would also continue through the project site. When facing north, there would be channelized views of the project site from Bridgeview Street, toward China Basin Park. These views would continue because Bridgeview Street would extend in a north–south orientation through the project site. The proposed project would replicate the Mission Bay street grid by effectively extending all proposed streets north–south and east–west through the site, allowing for the preservation of existing views.

Conclusion Regarding Impacts on Onsite Visual Character and Surroundings. The proposed project would create new landscaped open space areas and construct buildings that would reflect an architectural design that would be generally compatible with that of the surrounding development. As described above, existing views from Third Street are blocked mainly by existing intervening structures. The proposed buildings would provide a visual continuation of these features by adding new buildings to the project site. In addition, the proposed project would continue existing streets (Channel Street, Long Bridge Street, and Bridgeview Street) through the project site, preserving existing views and the street grid in the Mission Bay South Redevelopment Plan area. As described above, the proposed project would adhere to the Design Controls, which guide physical development on the project site. Implementation of the Design Controls would ensure that the proposed buildings would be visually consistent with their setting. They would be of a scale, proportion, and level of detail that relates to the fabric of the existing neighborhood. Examples from the Design Controls (on pages 161 and 172) for how this would be accomplished include the following:

- For buildings over 160 feet in height, sculpting of the upper building helps to create visually pleasing, elegant forms that reduce in bulk as they rise toward the sky.
- The design of the façade should consider the relationship of solid to void, bays and recesses, and the creative use of contrasting colors, textures, and patterns. A residential scale and proportion may be achieved using the following design measures:
    - Break the façade up into a greater number of smaller elements toward the base (street level), with fewer larger moves toward the top of the building;
    - Balconies, projections, and changes in plane can be used to break up the massing of both the streetwall and upper building;
    - The longer the façade, the more significant the change in plane, color, or material should be.

Based on the above, the impact on onsite visual character or quality and the surroundings would be ***less than significant***.

Impact AE-4. The proposed project would not create a substantial adverse effect on light and glare. (Less than Significant)

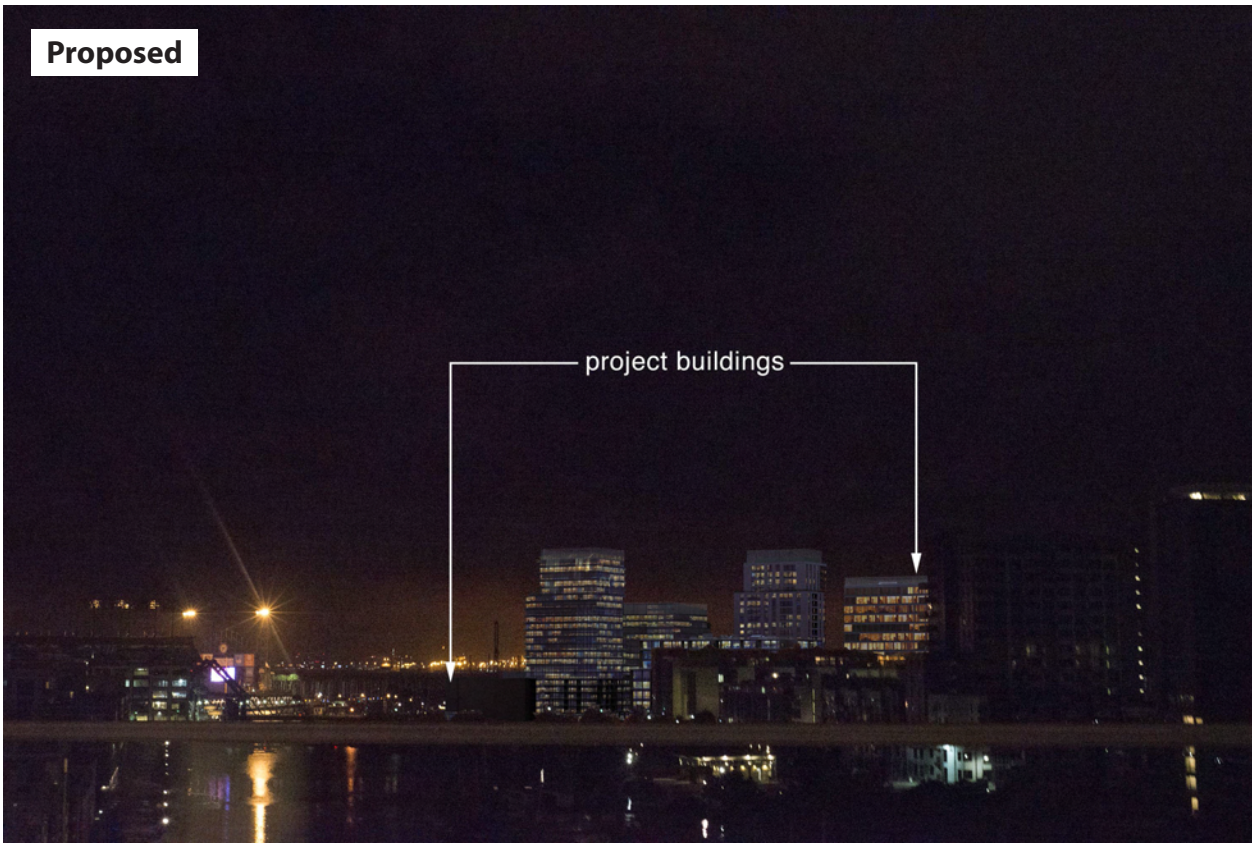
Nighttime lighting at the existing project site is variable. The project site can be fairly well lit by vendor lighting and vehicle headlights during night games or events at AT&T Park or events at the project site itself. Stadium lighting at AT&T Park also increases visible lighting at the project site. Lighting levels at the project site are lower during nonevent days at AT&T Park when the site is lit only by street lighting, vehicle headlights on local streets, exterior security lighting associated with onsite pop-up retail and pier sheds, and interior and exterior lighting from buildings located offsite.

When seen in the middle ground and background from surrounding vantage points, such as Twin Peaks, Potrero Hill, and I-80, nighttime lighting associated with the proposed project would be indistinguishable from that of existing development surrounding the project site. In addition, from a distance, the forms of the tallest structures (Blocks A, D1, and F) would be more apparent at night when lit against the night sky; however, such forms are already characteristic of San Francisco's nighttime skyline, which is viewed as a distinct and scenic skyline. The proposed project would contribute to the existing skyline by adding lighted buildings and would not detract from these valued nighttime scenic vista views. Nighttime and daytime glare associated with the project site would not be distinguishable as separate from existing development surrounding the site.

Similar to distant views, many existing views of the project site within the project vicinity are largely screened by the existing development that surrounds the site, as shown in nighttime View 2 (Figure 4.B-10 on the following page). AT&T Park is in use in this view, as evidenced by the illuminated main scoreboard. Parking lot lighting at the project site is not visible from this vantage point on I-280. Bright stadium lighting and the stadium lighting's reflective glare on Mission Creek are a main focal point in this nighttime view. Lighting from development in the East Bay is visible across the Bay as a concentrated orange and yellow band along the shoreline, which provides a secondary focal point in existing views. In addition, ambient light glow creates a wider yet dissipated band of warm-colored light that radiates up into the night sky from the East Bay and creates a halo around stadium lighting at AT&T Park.

As seen in Figure 4.B-10, the proposed views illustrate that the proposed project would screen part of the East Bay lighting and light glow from this vantage point. However, it would not screen nighttime lighting associated with AT&T Park from this vantage point. The proposed project would introduce new sources of nighttime lighting that, as seen from this vantage point, would be associated mostly with interior lighting, which would be visible through windows. Although this would increase lighting associated with the project site, it would create more of a visual balance in lighting when AT&T Park is in use. Lighting associated with the project site would be more of a focal point from this vantage point when the stadium is not in use at night.





Source: Square One Productions, 2016.

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Figure 4.B-10
View 2 (Nighttime) — View from I-280 Looking Northeast

In addition, the lights in the adjacent buildings surrounding the project site are not illuminated within the existing buildings in both the existing and proposed views, which would not be a typical condition. At the time these photos were taken, the buildings were in the process of being constructed. Construction is a temporary activity and the buildings under construction would be finished at these locations by the time the proposed project is operational. Therefore, for the purpose of this analysis, it is assumed that these existing buildings would be occupied and illuminated at night, as depicted for the proposed project. As a result, it is anticipated that nighttime lighting associated with the project site would blend with existing development in Mission Bay and would not constitute a new substantial source of nighttime lighting.

Project impacts resulting from light and glare are most likely to occur at locations that have immediate foreground views of the project site. From street-level vantages points within the project vicinity and near the project site, site lighting would blend in with lighting associated with other development and would not stand out as being out of character or substantially increase lighting levels in the vicinity. However, standard exterior lighting and light-emitting diode (LED) lighting, if used, could affect sensitive receptors if not properly designed. LED lights, in particular, can negatively affect humans by increasing nuisance light and glare, in addition to increasing ambient light glow, if proper shielding is not provided and blue-rich white light (BRWL) lamps are used.[26] This would result in a substantial source of project-related nighttime light and glare that could adversely affect nighttime views in the area.

Similarly, windows would be the most prominent source of daytime glare and could affect viewers in the mid- to upper-level stories of nearby existing buildings to the south and west as well as viewers who are outside or driving to the north of the project site. Glare is most likely to be an issue on proposed building faces that are not located next to existing development, which would block the sun, such as where the buildings would be taller than surrounding development (Blocks A, D1, F, and K) and where proposed building faces would be exposed along the outer edge of the development and shoreline (Blocks A, G, and K and Blocks H–J), as seen in proposed View 1 in Figure 4.B-2 (page 4.B-25). Glare is most likely to occur in the morning as the sun is rising from the east and in the early evening when the sun is setting to the west. Lower sun angles cause sunlight to hit and reflect off of windows, resulting in glare and specular highlighting. However, the Design Controls that would guide physical development on the project site would ensure that the buildings would not result in substantial light and

[26] International Dark-Sky Association. 2010a. *Seeing Blue.* Nightscape 80: 8-12. April. Available: http://www.darksky.org/assets/documents/SeeingBlue.pdf. Accessed: June 14, 2015; International Dark-Sky Association. 2010b. *Visibility, Environmental, and Astronomical Issues Associated with Blue-Rich White Outdoor Lighting*. May. Available: http://www.darksky.org/assets/documents/Reports/IDA-Blue-Rich-Light-White-Paper.pdf. Accessed: June 14, 2015; International Dark-Sky Association. 2015. *Issues New Standards on Blue Light at Night* IDA. Nightscape 94: 10. April. Available: http://www.darksky.org/assets/documents/Nightscape/IDA_April2015_LowRes.pdf. Accessed: June 14, 2015.

glare impacts on the surrounding community. The Design Controls (on page 180) specify that all exterior light must be suitable for a given "Lighting Zone," as defined by the U.S. Green Building Council (USGBC) and Illuminating Engineering Society of North American (IESNA). All lighting would be shielded to prevent glare at private and public uses, especially residential units. The angle of maximum candela from each interior luminaire located in the buildings would intersect opaque building interior surfaces and not exit out through windows. All proposed lighting would incorporate cut-off controls to enable compliance with the Green Building Specifications attached to the Design Controls as well as the "Light Zone" credit requirements found in the USGBC's current Leadership in Energy and Environmental Design (LEED) standards for new construction. All luminaires would be at least semi-cutoff types (directed light designs to shield against light pollution), with noncutoff types only as permitted, subject to review and approval. The Design Controls would also encourage all surfaces that are visible to the exterior to be studied for luminance ratios and glare, because illuminated surfaces, rather than the light source itself, can often be the major source of glare from a building. All lighting adjacent to the Bay would be designed and oriented so that lighting would face inward and toward the shoreline, minimizing light trespass into adjacent waters.

Windows installed within proposed project buildings would be selected for their ability to minimize glare. Per City Planning Commission Resolution 9212, the proposed project would be prohibited from using mirrored or reflective glass on buildings. To the extent feasible, windows would be designed to effectively reduce the refractive index of glass windows and prevent interior light from being emitted brightly through the glass. This could be achieved by a low-emissivity coating on exterior glass surfaces of proposed structures. To achieve a baseline minimum of daylighting and reduce reflectance, 90 percent of all glazing would have at least a 55 percent or higher visible light transmittance (Tvis) value. Additionally, the proposed project would be required to adhere to Planning Code Section 139, the San Francisco Bird-Safe Building Ordinance, which focuses on buildings that create location-specific hazards and building-feature hazards with respect to bird collisions. Section 139, requires 90 percent of glazing in the Bird Collision Zone (i.e., 60 feet above grade, plus 60 feet above an adjacent vegetated roof, 2 acres or larger) to be treated (i.e., fritted,[27] stenciled, frosted, or covered with netting, screens, grids, or bird-visible ultraviolet patterns, as defined in Section 139). The Bird-Safe Building Ordinance specifies façade treatments for glazing and lighting design, as outlined above.

Implementation of the Design Controls for the proposed buildings, City Planning Commission Resolution 9212, and Planning Code Section 139 would ensure that all light and glare impacts on surrounding areas are ***less than significant***.

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[27] *Fritted glass* refers to glass with ceramic or metal particles that have been fused to the glass to create an opaque or textured surface. The particles are generally opaque and can be applied to either the entire surface of the glass or just particular areas to create decorative patterns.

CUMULATIVE IMPACTS

This analysis of the contribution of the proposed project to cumulative aesthetics impacts is based on consideration of the reasonably foreseeable future projects identified in Table 4-1 in Chapter 4, *Environmental Setting and Impacts*. The reasonably foreseeable projects that are closest to the project site and included within the geographic context of the cumulative scenario include Mission Bay Blocks 1,[28] 3E, 4E, 6E, 6W, 9, 9A, and 12E.

Impact C-AE-1. The proposed project, in combination with other foreseeable development in the surrounding area, would not have a significant cumulative impact on visual character or the quality of scenic vistas or public view corridors and would not cumulatively contribute to new sources of light, glare, or shadows. (Less than Significant)

Similar to the proposed project, each of the reasonably foreseeable projects involves the infill of urban land uses within the vicinity of or immediately adjacent to the project site. Under the guidance of the Mission Bay South Redevelopment Plan, the surrounding area is undergoing an ongoing intensification of land uses from previous conditions. Similar to the proposed project, build out of the other reasonably foreseeable projects entails replacing numerous parking lots, vacant lots, and light industrial uses with pedestrian-friendly, mixed-use (mainly residential) developments that are characterized by a variety of building forms, heights, and architectural detailing. Other than the Embarcadero Historic District, no other scenic resources exist in the area.

SCENIC VISTAS

Views from the Bay Trail. In addition to the proposed project, reasonably foreseeable development along Mission Creek could also be visible from the portion of the Bay Trail next to AT&T Park. The foreground views of China Basin would remain the same, but the middle ground and background views would be altered with development of cumulative projects. The new buildings could be visible from the Bay Trail because of the increased massing and height, but the majority of buildings from other development would most likely be blocked by proposed structures at the project site. Taller structures associated with the proposed project would block the majority of views of development within Mission Bay, block all views of Potrero Hill, and decrease views of Twin Peaks from the Bay Trail. With implementation of other projects along Mission Creek, views of the Twin Peaks ridge would most likely still be visible through the Mission Creek view corridor. Views from the Bay Trail near AT&T Park generally focus on areas away from the project site and other development along Mission Creek and more toward the north and east where views encompass the panoramic and expansive

[28] Given the construction schedule for Mission Bay Block 1, the following sections assume this project is in the baseline: 4.F, *Noise*; 4.G, *Air Quality*; 4.I, *Wind and Shadow*. Block 1 was not under construction at the time the visual simulations were prepared and, as such, is shown in the cumulative condition rather than the baseline.

scenery of the Bay, Bay Bridge, and East Bay Hills. Therefore, the proposed project, in combination with other development projects in the vicinity, would not block the majority of scenic views, as seen from the Bay Trail near AT&T Park.

Views from I-280. As shown in proposed cumulative View 2 from I-280 (Figure 4.B-11 on the following page), similar to the proposed project, projects along Mission Creek would introduce development with tall buildings close to the Bay. The architectural detailing, coloring, and surfacing treatments of the reasonably foreseeable buildings would be guided by the Mission Bay Design for Development, which also has guided the architectural detailing, coloring, and surfacing treatments of existing buildings constructed within Mission Bay. Therefore, development along Mission Creek would be consistent with existing development surrounding the site and would not stand out as being visually obtrusive within this vista. The primary change in scenic vista views resulting from the reasonably foreseeable projects is that a greater concentration of taller buildings would be introduced in proximity to the Bay's shoreline and further constrict views; therefore, greater portions of views of the Bay, South Beach Harbor Marina, and the East Bay Hills would be hidden.

Views from the Potrero Hill Neighborhood. Within middle ground views, existing development prevents views of the lower portions of reasonably foreseeable projects in the same fashion it would for the proposed project, as shown in proposed cumulative View 3 from the Potrero Hill neighborhood (Figure 4.B-12, page 4.B-51). The upper portions of the towers associated with taller reasonably foreseeable structures would be visible and would obscure portions of the towers associated with the proposed project but would not be taller than the proposed project or further obstruct views of the Bay, Bay Bridge, Yerba Buena Island, or the East Bay Hills. In addition, the general form of the variable heights associated with the reasonably foreseeable projects would be characteristic of the cityscape seen in this vista view.

Depending on the view, however, reasonably foreseeable developments may seem slightly inconsistent with the existing development within scenic vista views, as shown in proposed cumulative View 4 from the Potrero Hill Recreation Center (Figure 4.B-13, page 4.B-52). Within this view, the visual character of buildings associated with reasonably foreseeable projects could seem slightly inconsistent with the existing development with respect to their architectural detailing, coloring, and surfacing treatments. For example, the residential dwellings in the foreground are small two- or three-story buildings and colored predominantly in white, beige, and taupe, with grey, orange, and brown flat or peaked roofs. The other projects are likely to appear greyer because of the predominance of the windows that are typically used in high-rise buildings, which would be similar to those of the proposed project. The taller structures associated with the reasonably foreseeable projects would be visible, and although these projects would not be taller than the proposed project, they would still appear taller than surrounding development and further obstruct views of the Bay, Bay Bridge piers, and Treasure Island from this vista view. However, these would not stand out as being visually obtrusive within this vista.





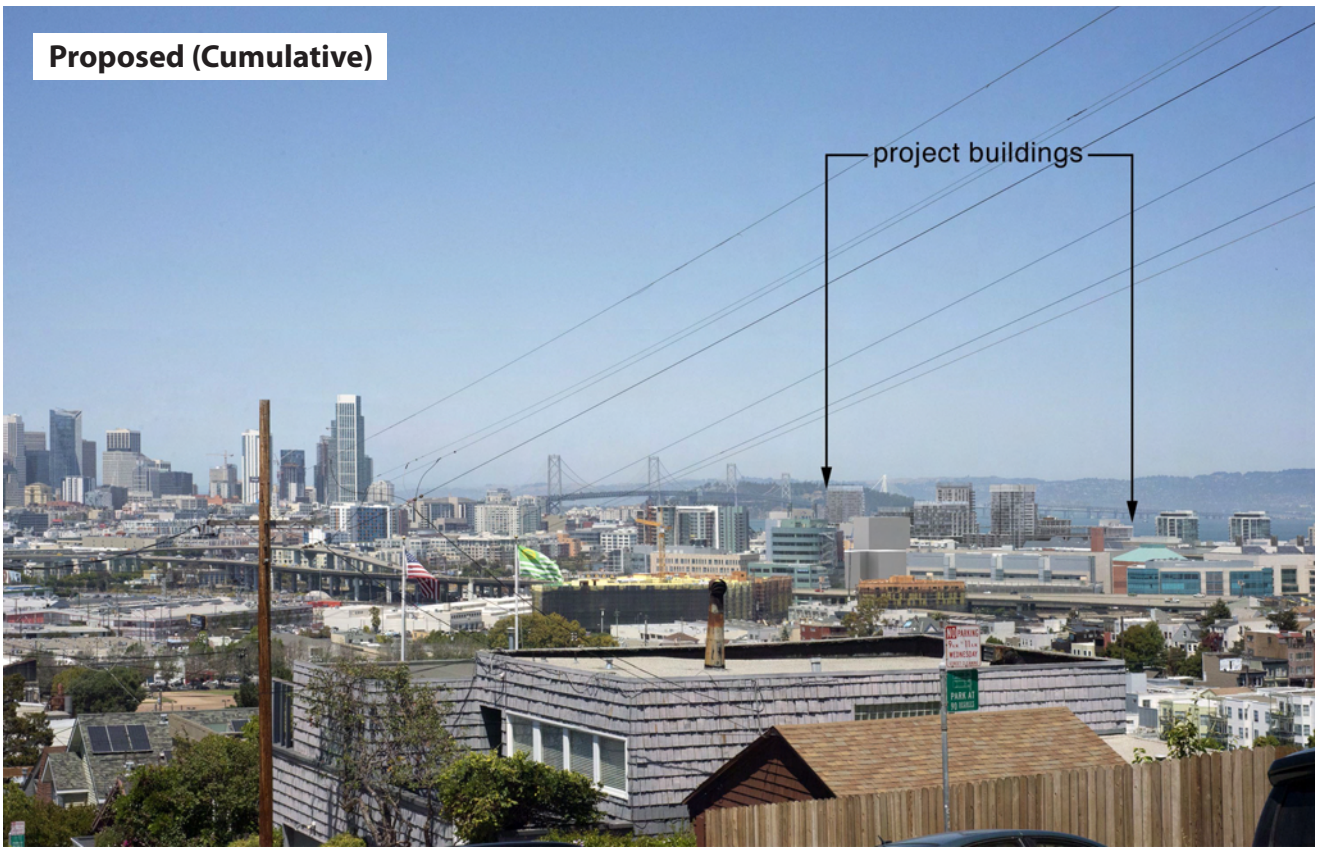
Source: Square One Productions, 2016.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.B-11
View 2 — View from I-280 Looking Northeast



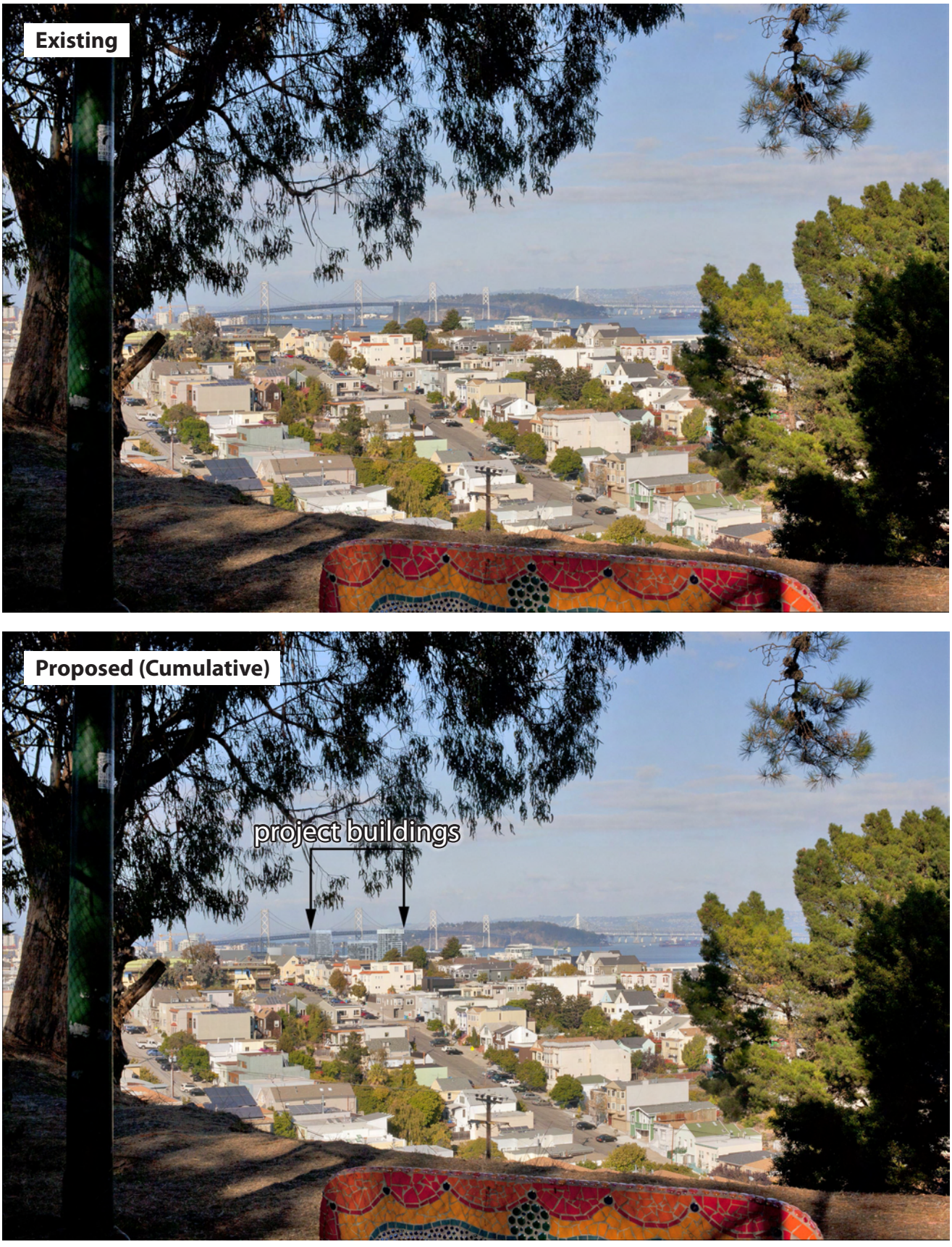


Source: Square One Productions, 2016.

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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.B-12
View 3 — View from Potrero Hill Neighborhood Looking Northeast



Source: Square One Productions, 2016.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.B-13
View 4 — View from Potrero Hill Recreation Center Looking Northeast

Views from Twin Peaks. Within background views, existing development prevents views of the lower portions of other projects in the same fashion it would the proposed project, as shown in proposed cumulative View 5 from Twin Peaks (Figure 4.B-14 on the following page). The architectural detailing, coloring, and surfacing treatments associated with the reasonably foreseeable buildings would likely be consistent with existing development surrounding the sites and therefore would not stand out as being visually obtrusive within this vista. The upper portions of taller structures would be visible but would not be taller than the proposed project or surrounding development. Given the expansive nature of this vista, the proposed project and the other proposed buildings would not interrupt the existing focal points associated with this scenic view to the degree that the reasonably foreseeable projects would not be visually apparent or notable within the view.

Views from I-80/Bay Bridge. Similar to views associated with View 5, scenic vista views from the westbound I-80 Bay Bridge (Figure 4.B-15, View 6, page 4.B-55) would not be greatly affected by the other development projects. The architectural detailing, coloring, and surfacing treatments associated with the reasonably foreseeable buildings would most likely be consistent with existing development surrounding the site and therefore would not stand out as being visually obtrusive within this vista. The upper portions of taller structures would be visible, and although taller than surrounding development, these buildings would not be taller than the proposed project. However, as seen in the existing view from this vantage point, development of variable heights is common in the project vicinity and neighboring portions of the city. Therefore, the proposed project, in combination with the other foreseeable projects, would not be visually apparent or notable within the view. In addition, the other development would not interrupt existing focal points within this scenic vista view associated with the city, John McLaren Ridge, the San Bruno Mountains, and the Santa Cruz Mountain Range.

Conclusion Regarding Impacts on Scenic Vistas. As with the proposed project, the other reasonably foreseeable projects are likely to be consistent with the design requirements set forth in respective design controls. In addition, the architectural detailing, coloring, and surfacing treatments of the reasonably foreseeable buildings would be guided by the Mission Bay Design for Development, which also has guided these design aspects of existing buildings constructed within Mission Bay. Although the proposed project and the other development would add height, bulk, and massing to the project vicinity, this change would not result in a significant impact on a scenic vista. The increased development would represent a small portion of the overall urban vista, as viewed from the Potrero Hill neighborhood, Potrero Hill Recreation Center, Twin Peaks, and I-80. From these locations, except for views from I-80, the lower levels of the other project buildings would be blocked by existing intervening development. The upper levels would be visible and, in the case of views from the Potrero Hill Recreation Center and the Potrero Hill neighborhood, would block portions of the view



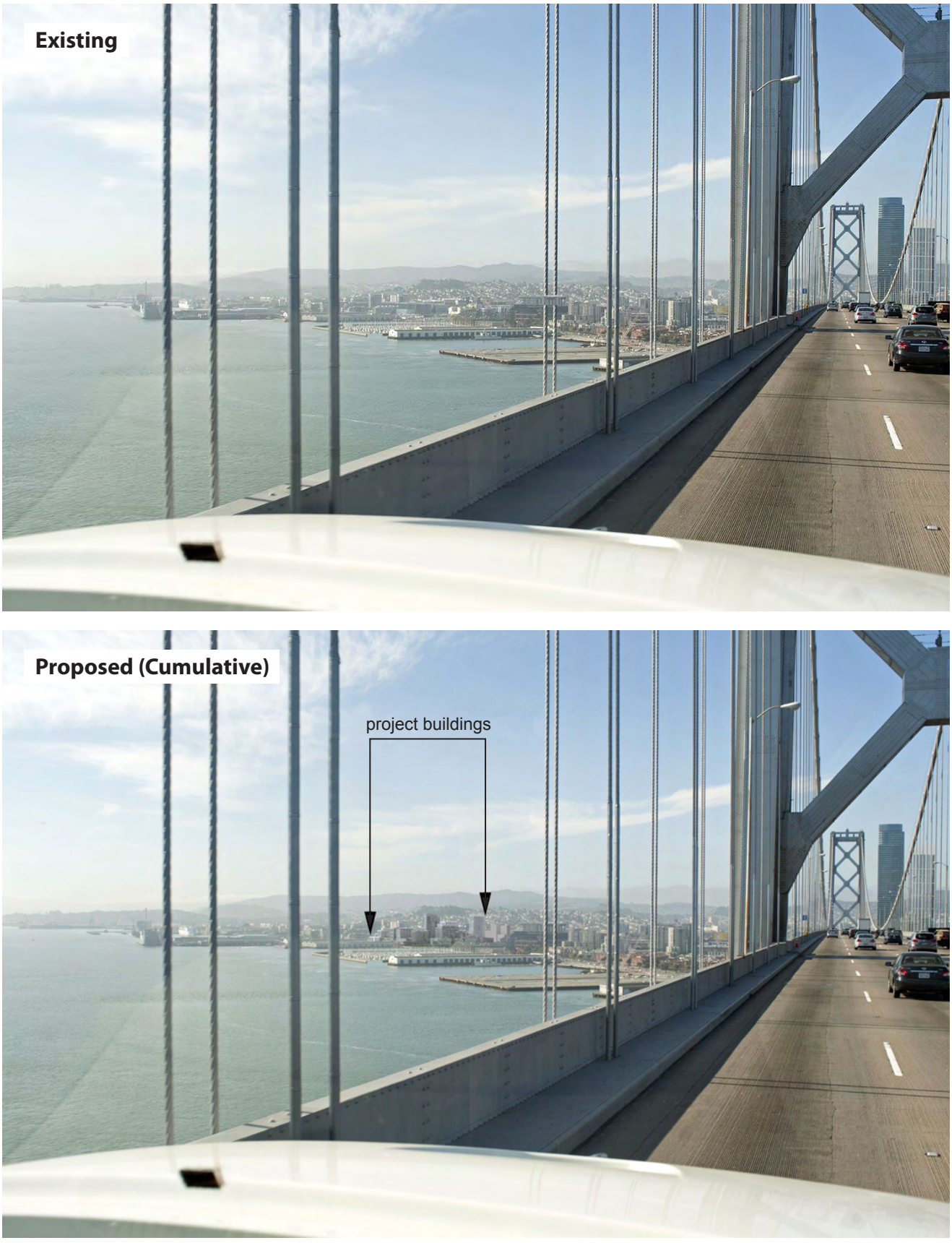


Source: Square One Productions, 2016.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.B-14
View 5 — View from Twin Peaks Looking Northeast



Source: Square One Productions, 2016.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.B-15
View 6 — View from the Bay Bridge Looking Southeast

of Yerba Buena Island, the Bay Bridge, or both, although these landmarks would remain partially visible. Overall, from these locations, the proposed project, along with other cumulative development, would appear as one element within the surrounding expansive urban development.

Although other development and the proposed project would be highly visible from the Bay Trail, views from this vista are focused more toward the north and east where views encompass the Bay, the Bay Bridge, and the East Bay Hills.

Although the proposed project and nearby development would add height, bulk, and massing to the project vicinity, this change would not result in a significant impact on a scenic vista. Thus, cumulative impacts on scenic vistas would be ***less than significant.***

SCENIC RESOURCES

Although there are no state-designated scenic routes associated with the other reasonably foreseeable projects, I-80 and I-280 are eligible State Scenic Highways with scenic vista views. Cumulative impacts on these vista views are analyzed above and not considered under this impact. Other than the Embarcadero Historic District, no other scenic resources exist in the area. As discussed for the project analysis, the proposed project would not degrade scenic resources associated with Pier 48, a contributing resource to the Embarcadero Historic District. No other foreseeable development projects are expected to affect the Embarcadero Historic District as a historical or scenic resource. Therefore, cumulative impacts related to scenic resources would be ***less than significant.***

VISUAL CHARACTER

As analyzed above under scenic vistas, the visual character of the other reasonably foreseeable project buildings would be mostly consistent with existing development surrounding the sites and would most likely not stand out as being visually obtrusive from the standpoint of architectural detailing, coloring, and surface treatments. Existing development in the area adheres to the Design for Development guidelines outlined in the Mission Bay South Redevelopment Plan. The reasonably foreseeable projects listed above would also be required to adhere to these guidelines, which establish height limits for buildings as well as land coverage, density, setback, design, and sign criteria along with other design controls for development. Therefore, the other projects would not be expected to change the quality of the area in a way that would be incompatible with the existing visual character. Similar to the proposed project, the other existing and reasonably foreseeable projects are likely to improve views and increase available open spaces through implementation of the guidelines. These features would be valuable amenities that would provide a visual reprieve within a dense urban setting and improve the quality of views associated with cumulative projects.

As described above, the proposed project would not degrade the visual character or quality of the project site or its surroundings. Although, similar to the proposed project, other cumulative development would substantially increase building height, mass, and bulk compared to existing conditions, all proposed development would be required to adhere to their respective design controls and consider the existing environment and views. Therefore, cumulative impacts on onsite and offsite visual quality would be ***less than significant***.

LIGHT AND GLARE

The other cumulative development in the area could include new illumination sources that would increase nighttime lighting, ambient light glow, and glare levels (e.g., from interior and exterior building lighting, street and pedestrian pathway lighting, parking lot lighting, and vehicle headlights). Reflective building surfaces or buildings that include large expanses of windows would also increase glare. The other cumulative projects would involve redevelopment or infill of urban sites that already generate light and glare or receive light and glare from surrounding existing sources. Therefore, these buildings are not anticipated to be large enough in scale to result in a substantial increase in nighttime lighting and glare conditions in the area. In addition, cumulative projects would apply the Design for Development guidelines in the Mission Bay South Redevelopment Plan, which address light and glare issues, and, similar to the proposed project, adhere to City Planning Commission Resolution 9212 and Planning Code Section 139. The proposed project would be required to implement the Design Controls, Resolution 9212, and Planning Code Section 139, which would ensure that the project's impact related to light and glare is less than significant. Thus, cumulative impacts from daytime and nighttime lighting and glare would be ***less than significant***.

4.C POPULATION AND HOUSING

This section provides background information on existing and projected population, employment, and housing conditions in the city and county and discusses the effects that the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project) would have on population, housing, and employment conditions. The analysis is based on population, employment, and housing data published in *Projections 2013* by the Association of Bay Area Governments (ABAG)[1], 2014 U.S. Census Bureau (Census Bureau) data, and the Regional Housing Needs Allocation (RHNA) goals. In addition, relevant data and policies of the Housing Element of the San Francisco General Plan (General Plan) are considered in this analysis.

The purpose of this section is to characterize the potential for project-induced population, housing, and employment changes that could trigger physical environmental effects beyond those that are examined in other sections and chapters of this environmental impact report (EIR) (e.g., Sections 4.E, *Transportation and Circulation*; 4.F, *Noise*; 4.G, *Air Quality*; 4.J, *Public Services and Recreation*; and 4.K, *Utilities and Service Systems* and Chapter 5, *Other CEQA Considerations*) and determine whether the project would result in impacts related to population and housing. The proposed project's baseline year is December 2013, which is when the NOP was published. The baseline has been adjusted as described in Chapter 4.0, *Environmental Setting and Impacts*. The buildout year for the proposed project is 2023 with construction anticipated to commence in 2017, and the cumulative year is 2040.

Issues identified in comments submitted in response to the notice of preparation (NOP) (Appendix 1) were considered in preparing this analysis. The comments focused on the following issues: population density, as it relates to the height of the buildings; affordable housing; and occupation of the proposed buildings by full-time residents versus part-time residents. As appropriate, these issues are addressed in this section.

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[1] ABAG data presented in *Projections 2013* are the most recent in the ABAG series of statistical compendia on demographic, economic, and land use changes in coming decades. The current version covers the period between 2010 and 2040. The projections illustrate how the region will accommodate growth if local jurisdictions adopt a set of policies consistent with the vision of Plan Bay Area. ABAG makes reasonable assumptions about the Bay Area's share of national economic growth, informed by an understanding of the region's changing demographic characteristics. The distribution of growth within the region among counties, cities, and Priority Development Areas is built around expected local policies and infrastructure investment as well as historic economic behavior. Thus, they are a function of the following four elements: (1) ABAG Executive Board policies, which are based on the Smart Growth Vision; (2) general plan policies for each particular jurisdiction; (3) economic trends; and (4) available land and prevailing land use pattern data, which are based on discussions between the ABAG staff and planning staff in each particular jurisdiction.

ENVIRONMENTAL SETTING

The following section discusses the existing population, housing, and employment characteristics of the Bay Area,[2] the city, and the immediate area in which the project site is located. In addition, this section also provides population, housing, and employment projections for the city and Bay Area.

POPULATION

As shown in Table 4.C-1, according to the 2014 figures published by the Census Bureau, the city has a population of approximately 852,000, which is an increase of nearly 6 percent from 2010.

TABLE 4.C-1. CITY HISTORIC POPULATION CHARACTERISTICS

Year	Population	Percent Change from Previous
1970	715,674	–
1980	678,974	-5.1
1990	723,959	6.6
2000	776,733	7.3
2010	805,235	3.7
2014	852,469	5.9

Source: U.S. Census Bureau. 2014. *American Community Survey*. One-year estimate.

ABAG provides projections regarding the amount of growth that may occur within the city and the Bay Area over 5-year intervals from 2010 through 2040. As shown in Table 4.C-2, according to ABAG, the city's population is projected to continue to grow, reaching 934,800 residents by 2025, the projection year closest to the proposed project's buildout year, which is 2023. This represents a growth rate of 10.4 percent relative to the 2015 population, the projection year closest to the proposed project's baseline year (2013). Similarly, the Bay Area is anticipated to increase its population by 9 percent in the same timeframe, reaching approximately 8.13 million by 2025.

TABLE 4.C-2. CITY AND BAY AREA POPULATION PROJECTIONS, 2015–2025

	2015	2020	2025	Growth 2015–2025
City and County of San Francisco	847,000	890,400	934,800	87,800 (10.4%)
Bay Area	7,461,400	7,786,800	8,134,000	672,600 (9.0%)

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

[2] ABAG defines the Bay Area as the nine-county region that includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

The project site is located within Census Tract 607, which is bounded by Townsend Street on the northwest, US 101 on the west, and 17th Street on the south. According to the Census Bureau, the tract had 9,250 residents as of 2013.[3] There are no residents currently residing on the project site.

HOUSING

According to the 2014 figures published by the Census Bureau, the city currently has 386,610 housing units, 353,410 of which are occupied. Approximately 33,200 housing units are vacant, which equates to approximately 8.6 percent of the city's housing stock. However, the 2014 *American Community Survey* (ACS) estimated a much lower vacancy rate, with a homeowner vacancy rate of approximately 0.9 percent and a rental vacancy rate of approximately 3 percent.[4] Of the occupied housing units, approximately 62 percent are renter occupied, and 38 percent are owner occupied. Average number of occupants varies for renter- and owner-occupied housing; however, there are 2.35 persons per household (pph) citywide (see Table 4.C-3, on the following page). The city's current employee-per-household ratio is approximately 1.35.[5] Census Tract 607 has approximately 4,440 occupied units of 4,670 total units, with approximately 2.01 pph. Approximately 68 percent of the occupied housing within the census tract is renter occupied, while 32 percent is owner occupied.

ABAG defines a household as an occupied dwelling unit; this includes all persons who occupy the housing unit. As shown in Table 4.C-4, on the following page, ABAG projects that the number of households is expected to rise to 396,000 in the city and 2.95 million in the Bay Area by 2025. The household growth rate for the city between 2015 and 2025 is projected to be 9.3 percent; the number of households in the Bay Area overall is expected to rise by 8.5 percent over the same time period.

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[3] U.S. Census Bureau. 2013. *American Community Survey, 2009–2013 Five-year Estimates.* Table DP05. Available: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed: April 4, 2016.

[4] U.S. Census Bureau, 2010–2014 Five-year American Community Survey, Five-year Estimates, San Francisco County, Selected Housing Characteristics. Available: http://factfinder.census.gov/rest/dnldController/deliver?_ts=461008993623. Accessed: February 15, 2017.

[5] U.S. Census Bureau. 2014. *American Fact Finder, American Community Survey*. One-year Estimates. Selected Characteristics of the Native and Foreign-born Populations. San Francisco City, California. ID S0501. Available: http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. Accessed: April 14, 2016.

TABLE 4.C-3. EXISTING HOUSING CHARACTERISTICS

	Number of Units	Average Number of Occupants per Household
City of San Francisco[a]		
Total Housing Units	386,610	n/a
Occupied Housing	353,410	2.35
Renter Occupied	220,570	2.09
Owner Occupied	132,840	2.79
Census Tract 607[b]		
Total Housing Units	4,670	n/a
Occupied Housing	4,440	2.01
Renter Occupied	3,010	2.06
Owner Occupied	1,440	1.91

[a] U.S. Census Bureau. 2014. ACS. One-year estimate, Table DP04.
[b] U.S. Census Bureau. 2013. ACS. Five-year estimate, Table DP04.

TABLE 4.C-4. CITY AND BAY AREA HOUSEHOLDS PROJECTIONS, 2015–2025

	2015	2020	2025	Growth 2015–2025
City and County of San Francisco	362,440	379,600	396,000	33,560 (9.3%)
Bay Area	2,720,410	2,837,680	2,952,910	232,500 (8.5%)

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

San Francisco has one of the least affordable housing markets in the nation. According to the City and County of San Francisco (City) 2014 Housing Element, home ownership in San Francisco is not feasible for most residents, with the rate of homeownership estimated at approximately 33 percent. Approximately 16 percent of San Francisco households can afford the $855,500 median housing price. Therefore, most housing units in the city are renter occupied (approximately 63 percent). However, the citywide average rental price in 2013 was $3,300, with the average price of two-bedroom apartments at $4,100. To afford this level of rent, a household would need to earn approximately $170,000 per year. The affordability gap[6] for low-income households (i.e., those households with income from 51 percent to 80 percent of the area median income) renting in the city is

[6] The affordability gap refers to the difference between the average rent and what very low and low income households can afford.

approximately $2,340, while the affordability gap for low-income households renting in the South of Market neighborhood (where the project site is located) is slightly higher, at approximately $2,675.[7]

The RHNA identifies allocated housing units for the 2014 to 2022 period (Table 4.C-5, on the following page). ABAG identified 28,869 units (defined by income category, with 16,333 units considered affordable) as the city's fair share of the regional housing need for the 2014 to 2022 period (Table 4.C-5).[8] With respect to income category, ABAG determined that the city would need to provide approximately 6,234 housing units to those with very low incomes, 4,639 housing units to those with low incomes, and 5,460 housing units to those with moderate incomes to meet its RHNA obligations (Table 4.C-5). The RHNA is further discussed below under *Regulatory Framework*.

As discussed in the 2014 Housing Element, between 2007 and the first quarter of 2014, the City was close to meeting its targets for market-rate housing under the 2007–2014 RHNA. The City met 41 percent of its production goal for low-income housing (i.e., less than 80 percent of area median income) and 16 percent of its production goal for moderate-income housing (i.e., 80 to 120 percent of area median income). When the 2014 Housing Element was prepared, the 2015–2022 planning period had not begun; therefore, the "housing pipeline" was used to provide an estimate of the future quantity of housing and determine how it compared to the RHNA targets. The Planning Department defines the pipeline as those projects that are under construction or that have been approved by the Department of Building Inspection within the past 3 years or filed within the past 5 years. As shown in Table 4.C-5, housing production in the city is estimated to total approximately 20,170 units, including units in the pipeline, units to be rehabilitated (non-public housing), and units for conservation/preservation (public housing). Compared to the RHNA targets for 2014–2022, this would result in an estimated shortfall in the city of approximately 8,699 units.[9] San Francisco's share of the RHNA is incorporated into the City's 2014 Housing Element (originally adopted in March 2011 and most recently re-adopted with amendments on April 27, 2015). As required by state law, the Housing Element of the General Plan discusses the city's fair-share allocation of regional housing needs by income, as projected by ABAG.

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[7] City and County of San Francisco. 2015. *City and County of San Francisco General Plan* (2014 Housing Element). P.I.21. Available: http://www.sf-planning.org/ftp/General_Plan/2014HousingElement-AllParts_ADOPTED_web.pdf. Accessed: April 4, 2016.

[8] Association of Bay Area Governments. 2013. *Regional Housing Need Plan for the San Francisco Bay Area: 2014–2022.* Adopted July 18, 2013.

[9] City and County of San Francisco. 2015. *City and County of San Francisco General Plan* (2014 Housing Element). Adopted: April 27, 2015. Available: http://www.sf-planning.org/ftp/General_Plan/2014HousingElement-AllParts_ADOPTED_web.pdf. Accessed: September 15, 2015.

TABLE 4.C-5. ABAG REGIONAL HOUSING NEED ALLOCATION FOR 2014–2022 (UNITS) COMPARED TO THE NEW HOUSING CONSTRUCTION PIPELINE, Q2 2014

	Regional	City/County		
Income Level	RHNA Targets	RHNA Targets	Total Estimated Housing Production[a,b]	Estimated Shortfall
Very Low	46,680	6,234	1,425	-4,809
Low	28,940	4,639	5,880	1,241
Moderate	33,420	5,460	695	-4,765
Subtotal of Affordable Units	*109,040*	*16,333*	*8,000*	*-8,333*
Above Moderate[c]	78,950	12,536	12,170	-366
Total	**187,990**	**28,869**	**20,170**	**-8,699**

Sources: Association of Bay Area Governments. 2013. *Regional Housing Need Plan for the San Francisco Bay Area: 2014–2022.* Adopted: July 18, 2013; City and County of San Francisco. 2015. *City and County of San Francisco General Plan* (2014 Housing Element). Adopted: April 27, 2015. Available: http://www.sf-planning.org/ftp/General_Plan/2014HousingElement-AllParts_ADOPTED_web.pdf. Accessed: September 15, 2015.

Notes:

a. Does not include three major development projects with a net total of 23,700 units: Hunters Point, Treasure Island, and Parkmerced, which include a total of up to 5,400 net affordable units.

b. Includes entitled units, rehabilitation (non-public housing), and conservation/preservation (public housing).

c. Above Moderate: Households with incomes greater than 120 percent of the county median family income. ABAG does not use the Above Moderate category. This category is included in the RHNA and in the analysis below to provide decision-makers with more information on housing impacts for the broad spectrum of new worker households associated with the proposed project.

EMPLOYMENT AND COMMUTE CHARACTERISTICS

San Francisco, a primary employment hub for the Bay Area, contains regional employment centers. Although the city was negatively affected by the economic downturn, with the crash of dot-com ventures and the resulting job losses between 2000 and 2010, steady employment growth is expected between 2015 and 2025. The Census Bureau estimates that there were approximately 698,260 jobs in the city in 2014.[10] Table 4.C-6, on the following page, presents ABAG employment projections for the city and Bay Area. The number of jobs in the city and the Bay Area is expected to increase by approximately 11.6 percent and 11.4 percent, respectively. By 2025, approximately 16.9 percent of the jobs in the Bay Area are expected to be in the city. The city and county had an unemployment rate of 3.1 percent in November 2016, down 0.3 percent from November 2015.[11]

[10] U.S. Census Bureau. 2014. *American Fact Finder, American Community Survey*. One-year Estimates. Sex of Workers by Means of Transportation to Work for Workplace Geography. San Francisco City, CA. ID B08406. Available: http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. Accessed: April 14, 2016.

[11] California Employment Development Department. 2016. *Historical Civilian Labor Force, San Francisco County*. November. Available: http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html. Accessed: February 7, 2017.

TABLE 4.C-6. CITY AND BAY AREA JOB PROJECTIONS, 2015–2025

	2015	2020	2025	Growth 2015–2025
City and County of San Francisco	617,420	671,230	689,080	71,660 (11.6%)
Bay Area	3,669,990	3,987,150	4,089,320	419,330 (11.4%)

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

Employment growth in San Francisco and the region directly affects the demand for housing, because new jobs attract new residents. Projections of increasing employment throughout the Bay Area suggest a need for housing to serve a growing workforce. Table 4.C-7, below, compares the projected number of jobs available in the city to the projected number of employed residents in the city. According to ABAG's projections, the number of employed residents in the city would be equal to approximately 74.8 percent of the available jobs in the city in 2025. Another consideration is the number of employed persons living in San Francisco who may work elsewhere. According to data collected by the Census Bureau, in 2014, approximately 50.4 percent of people who worked in the city also lived in the city.[12,13,14] The remaining working population commuted from other cities in the region or worked from home.

TABLE 4.C-7. COMPARISON OF NUMBER OF JOBS TO EMPLOYED RESIDENTS IN THE CITY, 2015–2025

	2015	2020	2025
Jobs	617,420	671,230	689,080
Employed Residents	460,450	501,470	515,490
Employed Residents to Total Number of Jobs (%)	74.6	74.7	74.8

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

As a regional job center, an area where there are more jobs than employed residents, the city has a larger share of commuters compared with other cities in the Bay Area; it also has a number of residents who commute from San Francisco to other regional job locations.

[12] The 368,418 employees who both live and work in the city minus the 33,586 employees who work from home = 334,832 city residents who both live and work in the city. The 334,832 residents who both live and work in the city/698,259 employees in the city = 50.4 percent of city residents who also work in the city.

[13] U.S. Census Bureau. 2014. *American Fact Finder, American Community Survey*. One-year Estimates. Sex of Workers by Means of Transportation to Work for Workplace Geography. San Francisco City, California. ID B08406. Available: http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. Accessed: April 14, 2016.

[14] U.S. Census Bureau. 2014. *American Fact Finder, American Community Survey*. One-year Estimates. Sex of Workers by Place of Work—Place Level. San Francisco City, California. ID B08008. Available: http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. Accessed: April 14, 2016.

There are currently no permanent full-time employees at the project site.[15] However, there are periodic employees who are associated with food vendors, public gatherings, and programming opportunities at The Yard at Mission Rock (mainly food vendors); they work onsite at the Yard on a temporary basis (pending development of the proposed project) or only when events occur. Pier 48 is used for events, parking and storage, which indirectly supports businesses in the area.

Table 4.C-8, below, illustrates the anticipated jobs and housing for the city, as projected by ABAG's *Projections 2013*, the most recent projections available. As shown, the number of households is projected to increase by 33,560 between 2015 and 2025, while the number of jobs in the city is expected to grow by 71,660 (more than twice the housing growth) during that same period. According to ABAG, the jobs/housing ratio is anticipated to slightly worsen from 1.70 in 2015 to 1.74 in 2025 (a change of approximately 2.4 percent). That is, in 2025, there would be one residential unit for every 1.74 jobs, compared to one residential unit for every 1.70 jobs in 2015.

TABLE 4.C-8. COMPARISON OF PROJECTED NUMBER OF JOBS TO HOUSEHOLDS IN SAN FRANCISCO, 2015-2025

	2015	2020	2025
Jobs	617,420	671,230	689,080
Households	362,440	379,600	396,000
Jobs/Housing Ratio	1.70	1.77	1.74

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

REGULATORY FRAMEWORK

STATE

Sustainable Communities Strategy and Senate Bill 375. Senate Bill (SB) 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS), as described below, as part of the Regional Transportation Plan (RTP) for the Bay Area.

[15] Parking is regulated by pay kiosks on a daily basis. Parking attendants may be used during game days and special events at both Parking Lot A and Pier 48; however, these employees are not permanent; they travel between multiple locations. Therefore, jobs would not be lost as a result of this project. The employees were, therefore, not factored into the analysis.

REGIONAL

Plan Bay Area. Plan Bay Area, which incorporates ABAG's *Projections 2013*, is the SCS for the region. It was jointly approved in July 2013 by ABAG and the Metropolitan Transportation Commission (MTC).[16] The plan represents a transportation and land use/housing strategy for the Bay Area to use to address its transportation mobility and accessibility needs, land development concerns, and greenhouse gas emissions reduction requirements through 2040. The project site is located within the Port of San Francisco (Port) Priority Development Area (PDA) in the adopted Plan Bay Area. PDAs are areas where new development will support the needs of residents and employees. The project site is located within the Port PDA in a pedestrian-friendly environment served by transit. Local jurisdictions, including the City and the Port, defined the character of their PDAs according to existing conditions and future expectations as regional enters, city centers, suburban centers, and/or transit town centers.[17]

In the Bay Area, the SCS and the RHNA (discussed below) are mutually reinforcing. They were developed together to meet the overlapping objectives of SB 375 and Housing Element law. The objectives include increasing the supply, diversity, and affordability of housing; promoting infill development and a more efficient land use pattern; promoting an improved intraregional relationship between jobs and housing; protecting environmental resources; and promoting socioeconomic equity. SB 375, which requires the RHNA to be consistent with the SCS, establishes an 8-year cycle for the RHNA. The 2014–2022 RHNA, discussed below, has been incorporated into Plan Bay Area.[18]

Housing Element Law. The RHNA process was established under state Housing Element law. It requires local governments in California to plan for future development of new housing units to meet their share of regional housing needs. Housing needs for each region in the state are determined by the State Department of Housing and Community Development (HCD) and submitted to Councils of Government for allocation to local jurisdictions. ABAG is ultimately responsible for determining the share of regional housing needs to be met by each local jurisdiction in the Bay Area. State Housing Element law has established five housing categories, three of which represent affordable housing. The categories are based on the Area Median Income (AMI) and take into account households ranging in size from one to six people. The five housing categories below are used by ABAG in allocating regional housing needs.

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[16] MTC is the government agency responsible for regional transportation planning, financing, and coordinating in the nine-county San Francisco Bay Area.

[17] Association of Bay Area Governments. 2013. *Plan Bay Area*. Available: files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf. Accessed: October 6, 2015.

[18] Association of Bay Area Governments and Metropolitan Transportation Commission. 2013. *Plan Bay Area: Strategy for a Sustainable Region.* Adopted July 18, 2013.

- Very Low 0 to 50 percent of the AMI
- Low 51 to 80 percent of the AMI
- Moderate 80 to 120 percent of the AMI
- Above Moderate 121 and 150 percent of the AMI
- Upper Over 151 percent of the AMI

LOCAL

San Francisco General Plan. All California cities and counties are required to include a Housing Element as a component of their general plans to establish housing objectives, policies, and programs in response to community housing conditions and needs. The Housing Element provides a framework for the community's longer-term approach to addressing its housing needs.[19]

The following objectives from the Housing Element are applicable to the proposed project.

- Objective 1: Identify and make available for development adequate sites to meet the city's housing needs, especially permanently affordable housing.
- Objective 4: Foster a housing stock that meets the needs of all residents across lifecycles.
- Objective 5: Ensure that all residents have equal access to available units.
- Objective 7: Secure funding and resources for permanently affordable housing, including innovative programs that are not solely reliant on traditional mechanisms of capital.
- Objective 8: Build public and private sector capacity to support, facilitate, provide, and maintain affordable housing.
- Objective 12: Balance housing growth with adequate infrastructure that serves the city's growing population.
- Objective 13: Prioritize sustainable development in planning for and constructing new housing.

Planning Code Section 415 and Proposition C. Affordable or "inclusionary" housing is governed primarily by the San Francisco Charter and San Francisco Planning Code Section 415. These documents require that private developers of new market-rate housing provide inclusionary housing (at income levels defined in the Planning Code) by either paying an in-lieu fee or delivering affordable units on or offsite. In June of 2016, San Francisco voters amended

[19] City and County of San Francisco. 2015. *City and County of San Francisco General Plan* (2014 Housing Element). Adopted April 27, 2015. Available: http://www.sf-planning.org/ftp/General_Plan/2014HousingElement-AllParts_ADOPTED_web.pdf. Accessed: September 15, 2015.

the charter (Proposition C) to increase inclusionary housing requirements and authorize the Board of Supervisions to change affordable housing requirements by ordinance. By Ordinance No. 76-16, the board amended City codes to increase the inclusionary housing fee and establish requirements for its implementation, including preparation of an economic feasibility report.

Pursuant to Proposition C and Planning Code Section 415, for qualifying projects of 25 units or more, (1) for the onsite program, 25 percent of all units constructed would be dedicated to the inclusionary program, with a minimum of 15 percent of the units affordable to low- and very low-income households and another 10 percent of the units affordable to very low-, low- or middle-income households, and (2) for offsite or in-lieu fee compliance, the sponsor would pay an in-lieu fee or provide units offsite equivalent to 33 percent of the total number of units produced in the principal project. The Planning Code includes grandfathering for certain projects, based on the date of filing of the environmental evaluation application and receipt of a site or building permit.

Planning Code Section 415.3(c) provides an exemption from the new inclusionary requirements for projects that are located in a special use district for which a height limit increase was approved by the voters prior to January 12, 2016, to satisfy Administrative Code Section 61.5.1. These projects are governed by pre-existing approvals. Section 415(d) also permits the City to enter into development agreements or other similar binding agreements with inclusionary requirements that may differ from those in Section 415. The project is exempt from the inclusionary requirements because it would be located in a special use district and the required height limit increase was approved by voters in June 2014.

ENVIRONMENTAL IMPACTS

This section describes the impact analysis related to population and housing for the proposed project. It describes the methods that were used to determine the impacts of the proposed project and lists the thresholds that were used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing.

- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

METHODS FOR ANALYSIS

CEQA Guidelines Section 15064(e) notes that an economic or social change by itself would not be considered a significant effect on the environment. Population growth is considered in the context of local and regional plans and population, housing, and employment projections. Generally, a project that induces population growth is not viewed as having a significant impact on the environment unless the physical changes that would be needed to accommodate project-related population growth would have adverse impacts on the environment. Project-related employment and residential growth would result primarily in physical changes related to transportation, noise, air pollutant emissions, GHG emissions, increased demand for public services, increased demand for utility capacity, and increased demand for recreational facilities. These physical impacts are evaluated under other environmental topics in this chapter, such as Sections 4.E, *Transportation and Circulation*; 4.F, *Noise*; 4.G, *Air Quality*; 4.H, *Greenhouse Gas Emissions*; 4.J, *Public Services and Recreation*; and 4.K, *Utilities and Service Systems*, and Chapter 5, *Other CEQA Considerations*.

An indirect environmental impact is a change to the physical environment that is not immediately related to the proposed project (CEQA Guidelines Section 15064(d)(2)). Specifically, project-related growth-inducing effects include ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly. Projects that would remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant) might, for example, allow for development to occur in an area that was not previously considered feasible for development because of infrastructure limitations (CEQA Guidelines Section 15126.2(d)). As such, indirect population growth is a secondary impact, which is considered below under Impact PH-1.

This analysis considers whether the population and household growth that would occur with implementation of the proposed project would be considered substantial relative to remaining planned growth potential in the city. ABAG projections were used to analyze whether the growth caused by the project would be within planned growth projections. Specifically, ABAG projections for 2015 are used to represent existing (baseline) conditions, and projections for 2025 are used to represent future (buildout) planned conditions. Growth that exceeds planned growth would be considered substantial.

As shown in Table 4.C-9 and Table 4.C-10 on the following page and discussed below, the High Commercial Assumption could result in up to 7,660 new city residents, while the High Residential Assumption could result in up to 7,720 new city residents at full buildout of the project site in 2023. Therefore, the High Residential Assumption would generate

TABLE 4.C-9. PROPOSED ONSITE RESIDENTS AND EMPLOYEES—HIGH COMMERCIAL ASSUMPTION

Land Use	Gross Square Footage (gsf)/Units	Generation Rate	Estimated Residents/Employees[a]
Onsite Residents			
Residential	1,100,000 gsf/1,000 units	2.35 persons/household	2,350 residents
Total Project Residents			*2,350 residents*
Employees			
Commercial	1,400,000 gsf	276 gsf/employee	5,070 employees
Active Retail	244,800 gsf	327 gsf/employee	750 employees
Residential	1,000 units	1 employee/32 units	30 employees
Pier 48	242,500 gsf	—	200 employees
Total Project Employees			*6,050 employees*
Employee-Induced City Residents			
Employees Who Also Live in the City		50.4%	3,050 employee/residents
Employee-Induced Housing Demand		1.35 employees/ household	2,260 households
Employee-Induced Residents		*2.35 persons/household*	*5,310 residents*
Total Project-Induced Population Growth in City			***7,660 residents***

Sources: Adavant Consulting, 2015; U.S. Census Bureau. 2014. ACS. One-year estimate. IDs B08406, B08008, S0501.

TABLE 4.C-10. PROPOSED ONSITE RESIDENTS AND EMPLOYEES—HIGH RESIDENTIAL ASSUMPTION

Land Use	Gross Square Footage/Units	Generation Rate	Estimated Residents/ Employees[a]
Onsite Residents			
Residential	1,600,000 gsf/1,600 units	2.35 persons/household	3,760 residents
Total Project Residents			*3,760 residents*
Employees			
Commercial	972,200 gsf	276 gsf/employee	3,520 employees
Active Retail	241,000 gsf	327 gsf/employee	740 employees
Residential	1,600 units	1 employee/32 units	50 employees
Pier 48	242,500 gsf	—	200 employees
Total Project Employees			*4,510 employees*
Employee-Induced City Residents			
Employees Who Also Live in the City		50.4%	2,270 employee-residents
Employee-Induced Housing Demand		1.35 employees/household	1,680 households
Employee-Induced Residents		*2.35 persons/household*	*3,960 residents*
Total Project Population Growth in City			***7,720 residents***

Sources: Adavant Consulting 2015; U.S. Census. 2014. ACS. One-year estimate, IDs B08406, B08008, S0501.

approximately 60 more residents than the High Commercial Assumption because of development of onsite housing and commercial uses. As such, with the exception of the jobs/housing balance analysis, when analyzing the population and housing impacts of the proposed project within the city, the High Residential Assumption is used as the basis for evaluation because it would result in the greatest number of new onsite housing units and the highest level of housing and population growth in the city.

This analysis also considers the proposed project's impact on the projected (2025) jobs/housing ratio in the city by calculating the projected jobs/housing ratio with and without the proposed project. The jobs/housing balance analysis conservatively considers the High Commercial Assumption, which, as discussed below, would involve construction of fewer housing units and generate more employees.

LAND USE ASSUMPTIONS

Population growth generated by the proposed project would consist of (1) growth from the project's proposed residential units, which would generate an onsite residential population, and (2) growth from the project's proposed commercial uses, which would generate an employment population. A portion of the employment population, in turn, would be expected to live within the city and create a demand for households. Compared with existing conditions, both the High Commercial (see Table 4.C-9, previous page) and High Residential (see Table 4.C-10, previous page) land use assumptions would result in both residential growth and employment growth in the city following the completion of construction. However, because of the different development scenarios contemplated under each land use assumption, the number of employees and residents would differ. Therefore, the residential and daytime population estimates for each have been calculated separately, as summarized below. However, determining if and to what extent future residents would occupy the units on a full-time or part-time basis would be speculative. Therefore, such an analysis is beyond the scope of CEQA and not discussed further.

High Commercial Assumption. The High Commercial Assumption would include a lower number of residential units (approximately 1.1 million gross square feet [gsf]) and a higher number of commercial (approximately 1.4 million gsf) and active/retail spaces (244,800 gsf).

Based on the city's pph ratio of 2.35, as published by the Census Bureau in 2014,[20] the 1,000 housing units proposed under the High Commercial Assumption would result in an additional 2,350 onsite permanent residents living at the project site. Given the proposed gross

[20] It should be noted that ABAG projects that the city will have 2.29 pph in 2025. In addition, Census Tract 607, which encompasses the project site, has approximately 2.01 pph. The current citywide average of 2.35 pph, which is higher than future projections and the existing census tract pph, provides a conservative scenario and is used for purposes of this analysis.

square footage for the different types of land uses and standard employee generation rates,[21] approximately 6,050 people would be employed at the project site under the High Commercial Assumption. If the existing commute patterns for jobs within the city continue, it is anticipated that approximately 50.4 percent of the onsite jobs would be filled by San Francisco residents, with the remainder filled by those living outside the city. As shown in Table 4.C-9, page 4.C-13, the proposed project would generate approximately 3,050 employee-induced residents who would live in the city. Under the High Commercial Assumption, assuming all employees who currently live outside the city would move to the city, a conservative and unlikely scenario, the proposed project could result in up to 2,260 new induced housing units within the city (using the city's average of 1.35 employees per household). Applying the city's current pph of 2.35 and the projected induced housing demand of 2,260 units, the commercial uses proposed under the project could result in an increase in city population of up to 5,310 employee-induced residents.

Thus, as explained above, the High Commercial Assumption would result in approximately 2,350 permanent residents living on the project site and potentially an additional 5,310 city residents living offsite. The new onsite residential uses and employment-based population growth could result in up to 7,660 new residents in the city. Additional information regarding proposed onsite residents and employees under the High Commercial Assumption is provided in Table 4.C-9, page 4.C-13.

High Residential Assumption. The High Residential Assumption would include a higher number of residential units (approximately 1.6 million gsf) and a lower number of commercial (approximately 972,000 gsf) and active/retail spaces (approximately 241,000 gsf). Based on the city's pph ratio of 2.35, as published by the Census Bureau in 2014,[22] the High Residential Assumption proposes the construction of 1,600 units to house a residential population of 3,760 at the project site. Proposed uses would employ approximately 4,510 people onsite. As under the High Commercial Assumption, given the existing commute patterns for jobs located within the city, it is anticipated that approximately 50.4 percent of the onsite jobs would be filled by San Francisco residents, while the remainder would be filled by those who live outside the city. An estimated 2,270 employee-induced city residents could also be city residents under the High Residential Assumption, resulting in an estimated 1,680 induced housing units, based on the number of employees/residents per household. Given that employees/residents of the proposed project would also be part of households, using the city's pph of 2.35, employment-induced population growth in the city could result in up to 3,960 induced residents. Under the High

[21] Adavant Consulting. 2015. *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand – Updated Project Definition*. Memorandum. June 30. (See Appendix 4-5 of this document.)

[22] It should be noted that ABAG projects that the city will have 2.29 pph in 2025. In addition, Census Tract 607, which encompasses the project site, has approximately 2.01 pph. The current citywide average of 2.35 pph, which is higher than future projections and the existing census tract pph, provides a conservative scenario and is used for purposes of this analysis.

Residential Assumption, assuming all of these employees who currently live outside the city would move to the city, a conservative and unlikely scenario, the proposed project could result in up to 1,680 new induced housing units within the city (using the city's average of 1.35 employees per household).

Thus, as explained above, the High Residential Assumption would result in approximately 3,760 onsite permanent residents living on the project site and potentially an additional 3,960 induced city residents as a result of proposed employment. Together, new onsite residential uses and employment-based growth could result in up to 7,720 new residents in the city. Additional information regarding proposed onsite residents and employees under the High Residential Assumption is provided in Table 4.C-10, page 4.C-13.

TOPICS NOT EVALUATED IN DETAIL

Displacement of People or Housing. As stated above, the project site does not currently have housing or permanent onsite employees. Existing onsite uses at the project site include occasional short-term events (such as Cirque du Soleil circus performances and Cavalia equestrian shows), pop-up retail at The Yard at Mission Rock, parking, and storage for those who work onsite when these events occur. These uses require few or no employees, and none of these uses employ people at the site on a regular basis. The proposed project would not displace any housing; therefore, it would not necessitate the construction of replacement housing elsewhere, resulting in ***no impact***. The only employees at the site are the insubstantial numbers of occasional employees associated with uses that are not designed for a fixed location. Such uses employ persons for limited periods. Therefore, these few employees would be expected to relocate as the uses and job opportunities move to other locations. Therefore, the project would not be expected to displace substantial numbers of employees and necessitate construction of housing elsewhere. These topics are not evaluated further.

IMPACTS AND MITIGATION MEASURES

Impact PH-1. The proposed project would not result in substantial population growth in an area, either directly or indirectly. (Less than Significant)

CONSTRUCTION

Although subject to change because of changes in housing market conditions, construction of the proposed project would be phased, occurring between 2017 and 2023.[23] On any given day, the number of employees onsite would range from 30 to 450, depending on the stage of

[23] The proposed project phasing is an estimate and provides the most conservative scenario. However, project phasing could extend past 2023, depending on market conditions.

construction and the number of phases being undertaken concurrently. It is anticipated that construction employees who are not already living in the city would commute from their residences elsewhere in the Bay Area rather than permanently relocate to San Francisco from more distant locations; this is typical for employees in the various construction trades. Once the construction phases are complete, construction workers typically seek employment at other job sites in the region that require their particular skills. Thus, construction of the proposed project would not generate a substantial population increase in the city or region. Temporary project-related impacts associated with an increase in population during the construction period would be ***less than significant***.

OPERATION

As shown in Table 4.C-10, page 4.C-13, operations under the High Residential Assumption (the more conservative scenario for this topic) would include 1,600 onsite units and accommodate an onsite residential population of approximately 3,760. It would also employ approximately 4,510 employees onsite. These employees could induce population growth throughout the city amounting to approximately 3,960 residents. Therefore, in total, the project could induce population growth amounting to 7,720 residents in the city.

Population Growth. Up to onsite 1,600 units could be constructed at the project site under the High Residential Assumption, resulting in an onsite population of approximately 3,760. The project site is located within Census Tract 607, which currently includes approximately 9,250 residents. Therefore, the proposed project would represent a 41 percent increase in population over existing conditions in the immediate area. Although this increase would be substantial at the local census tract, it would not be substantial in the context of citywide growth, as described below. Additionally, the project site is located within the Port of San Francisco PDA, which is designated for new development to support the needs of residents and employees.

As shown in Table 4.C-2, page 4.C-2, ABAG projects that the city's population will increase by approximately 87,800, from 847,000 in 2015 to 934,800 in 2025, while the Bay Area population will increase by approximately 672,600. Therefore, the maximum amount of direct (onsite) residential growth that would occur under the High Residential Assumption would be approximately 4.3 percent of the residential growth expected in the city and approximately 0.6 percent of the residential growth expected in the Bay Area. As a result of the proposed residential and commercial uses, an additional 7,720 residents could live in the city. The proposed project, in total, would represent 8.8 percent of the city's expected growth from 2015 to 2025 and approximately 1.1 percent of expected Bay Area growth. This is anticipated development for this area of the city.

Project roads and other infrastructure (i.e., wastewater and electricity transmission infrastructure) that would be developed would be sized to meet the needs of visitors,

businesses, and residents at the project site. Because this infrastructure would be sized to meet only project needs, it would not lead to additional indirect population growth or the need for additional housing beyond that generated by project uses.

Housing Demand. ABAG estimates that the number of households within the city will increase by approximately 33,560 between 2015 and 2025. As discussed above under the Methods for Analysis, the proposed project could generate demand for up to 1,680 induced housing units in the city to support employment generated by the project (assuming 50.4 percent of project employees would also live in the city). The 1,680 induced housing units would make up approximately 5.0 percent of the total projected household growth in the city. Some of these employee households could move to the proposed onsite housing units (up to 1,600 units). Even if none of the proposed onsite units were occupied by employees of the proposed project, the demand for the 1,680 units induced by the project would represent only 5.0 percent of ABAG-projected housing growth in the city. Project-induced population growth would be within the scope of planned growth and would not represent a substantial change or result in a sizable increase in housing demand. Increased demand for housing in the city and region would occur with or without the proposed project because of planned general population growth. Therefore, the project's contribution to that increased demand would be ***less than significant***.

The proposed project would also be consistent with City and regional planning efforts related to housing in that it would help the City reach its RHNA targets by constructing both market-rate and affordable housing units. New rental housing built for the proposed project would exceed the inclusionary housing requirements set forth in Section 415 of the City's Planning Code[24]. As explained above in the Regulatory Framework section, Planning Code Section 415.3(c) provides an exemption from the new inclusionary requirements for projects, such as the proposed project, that are located in a special use district for which a height limit increase was approved by the voters prior to January 12, 2016, to satisfy Administrative Code Section 61.5.1. These projects are governed by pre-existing approvals. Section 415(d) also permits the City to enter into development agreements or other similar binding agreements with inclusionary requirements that may differ from those in Section 415. Consistent with these provisions, the project sponsor would satisfy its inclusionary housing requirements through onsite affordable rental units. The income restrictions would be enforceable through a development agreement or other similar binding agreement as well as deed restrictions on the property. The project sponsor has proposed to restrict 40 percent of the onsite units to inclusionary affordable housing targets. Affordable housing would be consistently constructed throughout the phasing of the proposed project. Therefore, for the above reasons, the proposed project would contribute to the City's RHNA targets.

[24] While housing units at the proposed project site could be either rental or for sale, they are currently anticipated to be rental.

The proposed project would focus development in an area that has been identified by the City and ABAG as a PDA. As such, the project site is identified as suitable for population, housing, and employment growth in local and regional planning documents, and development on the site would assist in accommodating the planned population and employment growth.

Geographic Distribution of Housing Demand. The proposed project would generate a total indirect housing demand from potential employees of approximately 4,480 units under the High Commercial Assumption and 3,340 units under the High Residential Assumption.[25] This growth would occur throughout the region. As stated above, it is anticipated that approximately 50.4 percent of the employees generated by the proposed project would live in the city. The remaining employees would most likely find housing throughout the region, with the majority living in Marin, Alameda, San Mateo, Santa Clara, and Contra Costa Counties. ABAG projections are considered the benchmark for foreseeable housing growth in each area. As shown in Table 4.C-4, page 4.C-4, ABAG projects that the number of households will grow by 8.5 percent in the Bay Area between 2015 and 2025. Therefore, both land use assumptions under the proposed project would result in an indirect housing demand equal to approximately 1.4 percent of projected household growth in the Bay Area. Overall, on a regional basis, the proposed project's demand for housing would not be a significant share of the total housing growth projected by ABAG.

Jobs/Housing Balance. The jobs/housing balance refers to the ratio of the total job count in a jurisdiction and the total household count in the same area. The jobs/housing balance is an indicator of the extent to which the workforce may have the opportunity to live and work in the same community, assuming that the occupations of the employees match the occupations and skills required for the jobs and that the housing meets the needs of those employees. Local governments may use it as a planning tool to achieve particular policy outcomes. It is not, however, a regulatory tool and does not necessarily imply a physical change to the environment or relate to any recognized threshold of significance under CEQA. A worsening of the jobs/housing ratio may, however, be an indicator of longer commute times, the associated environmental consequences of which, such as impacts related to transportation, air quality, and greenhouse gas (GHG) emissions, are discussed in other sections of the EIR (Sections 4.E, 4.G, and 4.H, respectively). Therefore, the jobs/housing balance is discussed for informational purposes.

As described under Methods for Analysis, the High Commercial Assumption was used for the jobs/housing balance analysis as it is the most conservative scenario. As discussed above, the High Commercial Assumption would construct 1,000 housing units (expected to house approximately 2,350 residents) and generate 6,050 employees (fewer housing units but more employees than the High Residential Assumption). The 6,050 employees could result in

[25] Assuming 1.35 employees per household.

demand for approximately 2,260 housing units. As shown in Table 4.C-11, below, implementation of the High Commercial Assumption would slightly worsen the city's projected jobs/housing ratio in 2025 from 1.74 to 1.75. This change represents a difference of less than 1 percent compared to conditions without the proposed project.

TABLE 4.C-11. JOBS AND HOUSING UNITS IN THE CITY THROUGH 2025 WITH THE PROPOSED PROJECT (HIGH-COMMERCIAL ASSUMPTION)

	2015	2025
Jobs in San Francisco	617,420	689,080
Housing in San Francisco	362,440	396,000
Jobs/Housing Unit Ratio Without the Proposed Project	1.70	1.74
Jobs/Housing Unit Ratio With the Proposed Project	N/A	1.75

Source: Association of Bay Area Governments. 2013. *Projections 2013*. December.

Population, Employment, and Housing Growth Conclusions. The increase in the number of new jobs created under either the High Residential Assumption (i.e., 4,510) or under the High Commercial Assumption (i.e., 6,050) could result in new city residents. Housing demand from employees under the two assumptions would be approximately 1,680 units or 2,260 units, respectively, which corresponds to the range of potential impacts generated by the project at buildout. This estimate of project-induced housing demand is conservative because it assumes that none of the new employment opportunities associated with the proposed project would be filled by existing city residents. However, some jobs are likely to be filled by persons who already reside in the city or the Bay Area. The employee calculations also assume no job vacancies. In addition, some of the employees may choose to live in the up to 1,600 housing units under the High Residential Assumption or the 1,000 housing units under the High Commercial Assumption provided as part of the proposed project. Therefore, the actual employment generation, as well as associated induced city or Bay Area population, could be lower than indicated, depending on the rate of project buildout and regional business and economic trends.

Operation of the proposed project would induce residential population, housing, and employment growth in the project area; however, proposed project growth would be consistent with ABAG's population, housing, and employment growth projections for the city. The proposed project would also be located within the Port of San Francisco PDA, as defined by ABAG, an area for new development to support the needs of residents and employees. Therefore, project growth impacts would be ***less than significant***. The proposed project would not induce substantial population growth either directly or indirectly. Because growth in and of itself does not constitute a significant impact on the environment, the physical changes associated with growth that would occur as a result of project implementation are discussed elsewhere in Chapter 4.

CUMULATIVE IMPACTS

The geographic context for analyzing cumulative impacts related to population, housing, and employment is the city of San Francisco. The approach analyzes projected population, housing, and employment growth within the city of San Francisco and compares it to growth associated with the proposed project to determine if the proposed project would have a cumulatively considerable impact on population, housing, and employment.

Impact C-PH-1. The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not induce substantial population growth either directly or indirectly or create substantial demand for additional housing, necessitating the construction of replacement housing. (Less than Significant)

As discussed under Impact PH-1, above, both the High Commercial and High Residential land use assumptions would result in population, housing, and employment growth within the project area following the completion of construction. As stated above, operation of the High Residential Assumption would result in slightly more residents than the High Commercial Assumption. Operation of the High Commercial Assumption would accommodate an onsite residential population of approximately 2,350 and employ approximately 6,050. Of those employees who would work at the project site, an estimated 3,050 would also be city residents. Including the households of those employees/residents and the residents living at the project site, the High Commercial Assumption could result in up to 7,660 new city residents. Operation of the High Residential Assumption would accommodate an onsite residential population of approximately 3,760 and employ approximately 4,510. Of those employees who would work at the project site, an estimated 2,270 would also be city residents. Including the households of those employees/residents and the residents living at the project site, the proposed project could result in up to 7,720 new city residents.

POPULATION

ABAG's *Projections 2013* estimates that between 2010 and 2040 the number of households in San Francisco will increase by 101,539 (to 447,350 total households in 2040), the number of residents will increase by 280,465 (to 1,085,700 total population in 2040), and the number of jobs will increase by 190,780 (to 759,500 total jobs in 2040).[26] About 92 percent of the anticipated number of households and about 88 percent of the anticipated population growth

[26] These calculations are based on ABAG's *Projections 2013*, pp. 74 and 75.

will occur in San Francisco's PDAs.[27] At the regional level, ABAG's *Projections 2013* indicates that about 78 percent of anticipated housing growth and about 69 percent of anticipated population growth will occur within PDAs.[28]

As discussed above, the city's population could grow by up to 1,680 new housing units and 7,720 new persons with project operations. This population increase associated with the proposed project would exceed the 2040 household (1,497) and population (3,059) estimates for the Port of San Francisco PDA[29] but would be within the 2040 estimates for the adjacent PDAs[30] (26,880 new households and 79,100 new persons) and the city (101,539 new households and 280,465 new persons). The PDAs immediately adjacent to the project site are the Eastern Neighborhoods and Mission Bay. The Mission Bay PDA is to the west, and the Eastern Neighborhoods PDA is to the north and west. These PDAs are "Urban Neighborhood Place Types" (primarily moderate- to high-density residential areas with local-serving retail services and other small businesses or older industrial uses). The Eastern Neighborhoods and Mission Bay PDA populations are anticipated to grow by 31,060 and 40,850 residents, respectively. When considered at the citywide and regional level, the population increase attributable to the proposed project would not be considered substantial because it would not exceed population increases identified by ABAG for the adjacent PDAs (when considered together), for the city as a whole, or for the nine-county Bay Area region. The City's long-range planning efforts take into account anticipated population growth as well as demand on infrastructure, public services, and housing.

The proposed project would directly increase the onsite population within the context of an established urban area with high levels of local and regional transit services and facilities but would include neighborhood amenities and services that could accommodate this increase. This direct population growth is considered planned growth because the proposed project has been included in the City's population planning projections. By 2040, approximately 88 percent of San Francisco's projected population growth is expected to occur within PDAs, which include the project site.[31] Although the scale of residential development from the proposed project would be greater than the 2040 household and population estimates identified by ABAG for the Port of San Francisco PDA, the development of residential uses in this area would conform with

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[27] ABAG, *Projections 2013*, p. 71.

[28] ABAG, *Projections 2013*, p. 17.

[29] ABAG. *Priority Development Area Showcase*. Available: http://gis.abag.ca.gov/website/PDAShowcase/. Accessed: February 7, 2017.

[30] San Francisco County Priority Development Area projects include the following: Bayview/Hunters Point Shipyard/Candlestick Point, Balboa Park, Downtown-Van Ness-Geary, Eastern Neighborhoods, Mission Bay, Port of San Francisco, Transit Center District, Treasure Island and Yerba Buena Island, San Francisco/San Mateo Bi-county Area, 19th Avenue, Market-Octavia/Upper Market, and Mission-San Jose Corridor.

[31] ABAG, *Projections 2013*, p. 71.

the ABAG and City designation of the Port of San Francisco as one of 12 PDAs, which are served by existing utilities, infrastructure, and transit, with the potential to accommodate future population and housing growth in the city and the Bay Area.[32]

Indirect growth (or unplanned growth) includes residential and employment growth in surrounding neighborhoods resulting from an expansion of local infrastructure and public services. The proposed project would improve the onsite infrastructure and transportation network but would not build or expand infrastructure or public services that could encourage additional local growth beyond planned levels. Therefore, the proposed project would not result in substantial indirect population or employment growth.

For the reasons stated above, the proposed project would not result in a cumulatively considerable contribution to any potential cumulative impact related to substantial increases in population. Its cumulative impact would be ***less than significant***.

CONTRIBUTION TO HOUSING SHORTAGE

As identified in ABAG's Regional Housing Need Plan for the San Francisco Bay Area: 2014–2022, the regional housing needs allocation for the nine-county Bay Area is 187,990 residential units, with San Francisco's share at 28,869 units. The High Residential Assumption would provide approximately 1,600 new housing units, or 5.5 percent of the city's regional housing needs allocation, and 0.85 percent of the total regional housing need. The High Commercial Assumption would provide approximately 1,000 new housing units, or 3.5 percent of the city's regional housing needs allocation, and 0.5 percent of the total regional housing need. Over the course of the past several decades, construction of housing in the region has failed to keep pace with population growth in the Bay Area. Population growth is predicted to continue to grow at a relatively moderate rate through 2040, and the region is still attempting to make up for housing shortages from previous growth periods. The proposed project would help reduce the housing shortage but would not contribute to significant unplanned population growth.

The demand for the 1,680 or 2,260 housing units that would be generated by employment under the High Residential Assumption or High Commercial Assumption, respectively, would be more than the total number of units provided by the proposed project. However, the housing demand could be met with units developed under various citywide and regional planning efforts, onsite development, or housing built as a result of the Jobs-Housing Linkage Fee. As a result, the proposed project's contribution to the substantial cumulative housing shortage in the Bay Area would be ***less than significant***.

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[32] San Francisco County Priority Development Area projects include the following: Bayview/Hunters Point Shipyard/Candlestick Point, Balboa Park, Downtown-Van Ness-Geary, Eastern Neighborhoods, Mission Bay, Port of San Francisco, Transit Center District, Treasure Island and Yerba Buena Island, San Francisco/San Mateo Bi-county Area, 19th Avenue, Market-Octavia/Upper Market, and Mission-San Jose Corridor.

HOUSING DEMAND

The demand generated by the proposed project for housing units outside the city, conservatively assuming that 49.6 percent of those employed within the project site would commute from outside of San Francisco, would be dispersed throughout the nine-county Bay Area. The proposed project would create a demand for housing in San Francisco that would exceed the scope of the onsite residential development; however, anticipated household growth in adjacent PDAs (26,880), at the citywide level (101,539), and at the regional level (700,067), as estimated in ABAG's *Projections 2013*, could accommodate this additional demand. Therefore, population growth associated with increased project-related employment would not result in housing demand that would exceed planned regional housing development and would not be substantial. Because the employment increase associated with the proposed project would not be individually substantial or contribute to an exceedance of the City's employment projections, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact related to employment; the impact would be ***less than significant***. Cumulative impacts related to physical environmental topics (e.g., transportation, noise, air quality) are discussed in other sections of Chapter 4.

EMPLOYMENT

Development at the project site would provide about 4,510 (under the High Residential Assumption) or 6,050 (under the High Commercial Assumption) new permanent jobs by 2023 (in addition to temporary construction-related jobs generated by the proposed project). Regional projections indicate that by 2040 the San Francisco Bay Area will have about 4,505,230 jobs (up from 3,669,990 in 2015), an increase of 835,240. Citywide projections indicate that by 2040 San Francisco will have about 759,500 jobs (up from 617,420 in 2015), an increase of 142,080.[33] The proposed project's contribution of 4,510 or 6,050 new permanent jobs would represent about 0.10 to 0.13 percent of the anticipated increase in regional employment and about 0.5 to 0.7 percent of the anticipated employment growth in San Francisco through 2040.

San Francisco has traditionally experienced, and will continue to experience, employment opportunities that are not met by an equal supply of housing within the city or even the Bay Area. The demand for the 1,680 or 2,260 housing units that would be generated by employment under the High Residential Assumption or High Commercial Assumption, respectively, would be more than the total number of units provided by the proposed project. However, the housing demand could be met with units that could be developed under various citywide and regional planning efforts and housing built as a result of the Jobs-Housing Linkage Fee. Therefore, the population growth associated with increased project-related employment would not result in housing demand that would exceed planned levels for housing development and would not be

[33] ABAG, *Projections 2013*, p. 74.

substantial. Because the employment increase associated with the proposed project would not be individually substantial or contribute to an exceedance of ABAG's employment projections for the city, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact related to employment; and this impact would be ***less than significant***.

4.D CULTURAL RESOURCES

This section discusses the potential of the proposed Mission Rock Project to adversely affect cultural resources. The section describes the applicable regulatory and environmental setting for cultural resources within and around the project site, and analyzes the project's potential to adversely affect cultural resources, including historical resources, archeological resources, and human remains.

The City and County of San Francisco (City) received one comment related to cultural resources in response to the notice of preparation (NOP) (Appendix 1) asking for an evaluation of potential impacts to submerged cultural resources in the project area.

This section is based on the background information, historical resource evaluations, and information regarding potential project impacts on historical and other cultural resources provided in the following documents: *Historic Resource Evaluation, Seawall Lot 337 and Pier 48 Mixed-Use Development Project, San Francisco, California* (HRE);[1] the associated Historic Resource Evaluation Response prepared by the Planning Department;[2] *Geoarcheological Assessment for the Seawall Lot 337/Pier 48 Mixed-Use Project* (Geoarcheological Assessment);[3] and the *Environmental Planning Preliminary Archeological Review: Checklist for the Mission Rock Pier 48 and Seawall Lot 337 Project* (PAR).[4] These reports are included as Appendix 3-1, 3-2, and 3-3, 3-4, respectively.

ENVIRONMENTAL SETTING

The project site's environmental setting consists of the prehistoric and historical context for as yet unidentified archeological resources and a description of known historical resources within the California Environmental Quality Act (CEQA) study area. For purposes of this analysis, the study area includes the project site and a surrounding one-block radius (approximately 0.1 mile) of the project site. North of Mission Creek this area encompasses China Basin and AT&T Park; the eastern, southern, and western boundaries are formed by San Francisco Bay (Bay), Mission Bay Boulevard North, and Fourth Street, respectively. A comprehensive historical background that supports the identification of CEQA historical resources in the project study area is provided in the HRE report, and is incorporated here by reference. Likewise, the archeological setting and sensitivity analysis for the project site is documented in the PAR and

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1 VerPlanck Historic Preservation Consulting. 2016. *Historic Resource Evaluation (HRE), Seawall Lot 337 and Pier 48 Mixed-Use Development Project, San Francisco, California*. April.

2 San Francisco Planning Department. 2016. *Historic Resource Evaluation Response (HRER), Seawall Lot 337& Pier 48 Mixed-Use Development Project*. March 29.

3 ICF International. 2016. *Geoarcheological Assessment for the Seawall Lot 337/Pier 48 Mixed-Use Project*. May 2.

4 San Francisco Planning Department. 2013. *Preliminary Archeological Checklist (PAR).* September 9.

Geoarcheological Assessment; both are incorporated by reference. The cultural and historical background text in the following sections is condensed from the HRE, PAR, and Geoarcheological Assessment.

With the exception of the waterfront, a substantial portion of this area is currently used for parking and construction staging or is under construction (mostly mid-rise buildings planned as part of the Mission Bay Redevelopment Plan area). There are five historic and potential historic properties within this area, mostly on Port of San Francisco (Port) property near the waterfront; namely the two historic steel drawbridges that span Mission Creek (Third Street/Lefty O'Doul Bridge and Fourth Street/Peter Maloney Bridge), the Pier 50 Office Building, Atchison, Topeka & Santa Fe Railway (ATSF) car ferry slip, and the San Francisco Fire Engine Company No. 30 firehouse along Third Street.[5] Also, Pier 48 is the southernmost contributor to the Port of San Francisco Embarcadero Historic District. These resources have been considered in the HRE prepared for this project. A brief summary of the setting established in the HRE and PAR and a description of the CEQA historical resources present in the study area are provided in the following section.

CULTURAL AND HISTORICAL BACKGROUND OF MISSION BAY AND CHINA BASIN

PREHISTORIC TO PROTOHISTORIC

The earliest evidence of human occupation of California occurs near the end of the Pleistocene epoch (around 11,500 B.C.). Sites dating to this period are located primarily on the Channel Islands and the nearby mainland shores in Southern California. These sites have contents that indicate an emphasis on marine resource collection (e.g., shellfish and fish remains). Within the Bay Area, archeological deposits associated with this period are considered likely to either have been deeply buried or destroyed. Evidence of early Holocene (9600–5700 B.C.) land use has been found at a small number of sites throughout the Bay Area, with some of the earliest sites dating to around 9000 B.C., including CA-SCL-178 and CA-CCO-696. The contents of these sites, including terrestrial mammal remains and chipped and ground stone tools, indicate an emphasis on terrestrial resources by semi-mobile hunter-gatherers. During the middle of the Holocene epoch (5700–1800 B.C.), the emergence of specialized tools, a range of nonutilitarian artifacts, and the presence floral and faunal remains from a range of seasons indicates a transition toward sedentism in the Bay Area during this period. The early part of the late Holocene epoch (1800 B.C.–A.D. 1780) saw an increase in the exploitation of marine resources, as demonstrated by the presence of numerous shell middens, including several large shell mounds, while the latter part of the late Holocene epoch saw decreased reliance on marine resources and an increase in the diversity of resource types exploited by the people of the Bay Area.

[5] CCR Title 14(11.5) Section 4852(d)(2) indicates that 50 years is a general estimate of the time needed to understand the historical importance of a resource.

PROTOHISTORIC TO HISTORIC

Just prior to European contact, California was believed to have been home to what author Malcolm Margolin has described as "the densest Indian population anywhere north of Mexico." When the Spanish arrived in Northern California during the last quarter of the eighteenth century, some 7,000 to 10,000 Native Americans inhabited the Bay Region. The Spanish called the indigenous inhabitants of the San Francisco Peninsula *costeños*, which meant "coast dwellers." Today the term "Ohlone" is preferred by their descendants.

The Ohlone were semi-nomadic people who inhabited small seasonal villages near streams and tidal flats, where they had ready access to fresh water and food sources, including waterfowl, fish, and various kinds of shellfish. Hunting small terrestrial and marine mammals and gathering seeds, nuts, roots, shoots, and berries provided additional sources of nutrition. Acorns from oak trees contributed yet another important source of food, as suggested by the presence of grinding rocks and manos and metates near many Ohlone settlements where oaks also grew.

According to several sources, the northern part of the San Francisco Peninsula was located within the Yelamu tribelet's territory. The closest Ohlone village to the project site was called *Chutchui* and it was probably located on Mission Creek, not far from Mission Dolores. Residents of Chutchui moved seasonally to another village on San Francisco Bay called *Sitlintac* to harvest shellfish. Though the exact location of Sitlintac is not known, it was on the southern historical shore of Mission Bay, putting it in the general vicinity of the project site, which at that time was submerged beneath the waters of San Francisco Bay.

SPANISH AND MEXICAN PERIODS, 1769–1846

The first Europeans known to have visited San Francisco Bay arrived in 1769 as part of an exploration party led by Don Gaspar de Portolá, an agent of the Visitador General of Spain. Spanish explorers made several additional forays to the region prior to establishing a permanent settlement. In 1775, San Francisco Bay was surveyed by Juan Bautista Aguírre, under the direction of Lieutenant Ayála, captain of the *San Carlos.* Aguírre gave names to many of the natural features of San Francisco Bay, including Mission Bay, which he named *Enseñada de los Llorenes*, or the "Cove of Tears." He called it this after encountering three Ohlone who were weeping on the shores of this crescent-shaped body of water. Later, the shallow inlet took the name of nearby Mission Dolores.

Mexico rebelled against three centuries of Spanish colonial rule in 1810, eventually winning its independence in 1821. Among the territories the new nation inherited from Spain was the remote northern colony of Alta California. Mexico liberalized customs regulations to encourage foreign

traders – mostly British and New Englanders – to drop anchor in Yerba Buena Cove[6] and trade furniture, clothing, shoes, metalwork, and other manufactured items for locally produced cattle hides and tallow. The lucrative hide and tallow trade dominated California's economy during the Mexican period (1821–1848) and encouraged many Californios to establish cattle *ranchos* to fill the growing demand for leather, and other goods, by New England shoe factories.

In 1834, the Mexican government secularized the Franciscan missions of Alta California, including Mission Dolores, and granted vast tracts of ex-mission lands to favored individuals. As a result of this, an Englishman named William Richardson obtained a deed to land located along Yerba Buena Cove and began building and planning a settlement the following year. The settlement, Yerba Buena, was intended for use as a trading post and place where ships could resupply. Yerba Buena was formally designated as a *pueblo*, or civil settlement, by the Mexican government in the same year. In 1841, Governor Juan Bautista Alvarado confirmed *Rancho Potrero Nuevo*, or "New Pasture," to Francisco and Ramón De Haro, the sons of Francisco De Haro, the first alcalde (or magistrate) of Yerba Buena. The ranch, a half-square league in extent and bounded by Mission Creek to the north, San Francisco Bay to the east, Islais Creek to the south, and Alabama Street to the west, encompassed the area south of the project site.

Mission Bay, fed by Mission Creek and its many tributaries, which drained most of eastern San Francisco, remained in its natural state throughout the Spanish and Mexican periods. Although much of Mission Bay was overlain by less than 1 foot of water, the ground surface in the vicinity of the project area ranged from 2 to 32 feet below water level, as indicated by an 1853 U.S. Coast and Geodetic Survey map.

EARLY AMERICAN PERIOD: 1846–1856

As early as 1835, the American government began attempting to acquire the San Francisco Bay from Mexico. American political and business leaders coveted the Bay, seeing it as an ideal base for the nation's growing trade with Asia. The American government was also anxious to prevent the strategic but weakly held harbor from falling into the hands of England or Russia. American expansionist impulses received a boost with the election of James K. Polk to the presidency in 1844. Two years later, on May 12, 1846, American troops entered disputed territory in the Rio Grande Valley of Texas, provoking a war between the United States and Mexico. After a year and a half of fighting, the Mexican government capitulated. On February 2, 1848, the two nations signed the Treaty of Guadalupe-Hidalgo. By its terms, Mexico ceded 525,000 square miles of territory to the United States in exchange for a lump sum payment of $15 million and the assumption of $3.5 million of debt owed by Mexico to American citizens.

[6] Yerba Buena Cove was on San Francisco Bay, southeast of Telegraph Hill (near the intersection of Broadway and Battery Street) and south of Rincon Point (near the intersection of Harrison and Spear Streets).

On July 9, 1846, Captain John B. Montgomery landed in Yerba Buena and raised the American flag above the Custom House. Mexican rule came to an end in the pueblo without a shot being fired. On the eve of the American conquest, the population of Yerba Buena numbered around 850. The people were housed in approximately 200 structures. Before departing, Captain Montgomery appointed Lieutenant Washington A. Bartlett to be the first American alcalde, or mayor, of Yerba Buena. One of Bartlett's first actions was to rename the settlement "San Francisco," which he did on January 30, 1847.

Another of Bartlett's priorities was to extend the boundaries of the fast-growing community. In 1847, he hired an Irish immigrant named Jasper O'Farrell to complete the city's first official survey under American rule. O'Farrell's plan, which enlarged San Francisco's area to almost 800 acres, extended the boundaries of the Vioget Survey[7] south to O'Farrell Street, west to Leavenworth Street, north to Francisco Street, and some distance eastward into Yerba Buena Cove. Anticipating the need for a direct route from Yerba Buena Cove to Mission Dolores, O'Farrell laid out Market Street, a 100-foot-wide thoroughfare oriented parallel to the old Mission Wagon Road. Market Street followed a southwesterly diagonal alignment to skirt the marshlands ringing Mission Bay.

The discovery of Gold at Sutter's Mill in January 1848 unleashed an unprecedented population explosion in San Francisco. News of the discovery moved slowly at first, becoming common knowledge only after Sam Brannan, publisher of the *California Star*, ran through the streets of San Francisco shouting "Gold! Gold on the American River!" The news spread quickly to ports in Central and South America and eventually to Europe and the East Coast of the United States. By the end of 1848, thousands of gold-seekers from around the world, dubbed "forty-niners," made their way to San Francisco. Between 1848 and 1852, the population of San Francisco grew from fewer than 1,000 to almost 35,000 people. Although the area around Yerba Buena Cove quickly filled up with buildings and tents, the area around Mission Bay remained almost uninhabited.

MISSION BAY SURVEYED AND SUBDIVIDED: 1856–1865

FILLING MISSION BAY

The large-scale filling of Mission Bay in the vicinity of the project site occurred by 1860 when a 100-foot sand hill on Townsend Street was excavated by a steam shovel and dumped into the Bay to provide a building site for Citizens Gas Works. Other early filling activity started in the

[7] In 1839, Jean Jacques Vioget, a Swiss-born tavern keeper in the pueblo of Yerba Buena, was hired by Governor Juan Bautista Alvarado to survey the settlement. Vioget's plan made *Calle de la Fundacion* (now Montgomery Street) the primary street of the village, with a public square at its center called *La Plaza* (now Portsmouth Square). During the Mexican period, the settlement grew to encompass approximately one dozen blocks (VerPlanck, HRE, page 27).

early 1850s and was undertaken on a piecemeal basis by contractors who had been hired by the City to build streets. Although the project site was not filled at this time, the larger context around Mission Bay began to evolve as land was filled and industrial use of the area expanded.

In 1888, historian Hubert H. Bancroft wrote that 450 acres of land in the Mission Bay area had been filled in just 14 years.

MISSION CREEK CHANNEL

Although Mission Creek had been designated a navigable creek in 1854, much of the creek bed had been illegally filled by local landowners. Further filling activity east of Mission Creek's mouth, at Eighth and King Streets, was finally halted by law in 1872. The City then commissioned a pair of seawalls to preserve a 200-foot-wide channel from Eighth and Townsend to China Basin where the state eventually planned to build a network of wharves and piers. In 1874, Mission Creek west of Seventh Street was formally abandoned as a navigable stream, although it does not appear to have been entirely filled in until the 1890s. Following the completion of the Mission Creek Channel, industrialists built wharves and finger piers[8] from the south seawall of the channel into what remained of Mission Bay. Meanwhile, the Southern Pacific Railroad (as the Central Pacific was renamed in 1885) was hard at work filling its property in Mission Bay. One of its first projects involved filling a 1,600-foot-long causeway, following the alignment of Sixth Street. By 1903, more than two-thirds of the Southern Pacific Railroad's holdings in Mission Bay had been filled, leaving only a stagnant lagoon at the center of the bay.

INDUSTRIAL DEVELOPMENT OF MISSION BAY: 1865–1898

Fueled by profits from Nevada's Comstock Lode silver mines, San Francisco entered a period of sustained prosperity in the years following the Civil War. Between 1860 and 1890, the population of the city grew from 56,802 to almost 300,000, a five-fold increase. The city's population continued to grow rapidly, reaching 343,000 in 1900 and making it the largest American city west of St. Louis. Although the city contained a quarter of the state's population, San Francisco accounted for 65 percent of the state's manufacturing employment. San Francisco's port facilities also handled nearly all of the state's imports and exports, serving a tremendous hinterland that comprised the entire western third of the United States. As previously discussed, most of San Francisco's early industrial activity occurred in the South of Market Area. After the Civil War, room for industrial expansion was scarce in the older parts of the city. Increased conflicts with residents in the densely populated South of Market Area, as well as the lack of physical space to expand, caused industrialists to consider the vast Mission Bay area as a potential industrial reservation.

[8] The term "finger pier" refers to a structure that is anchored at a bulkhead or seawall on its landward side and built out over the water on pilings. In contrast to a wharf, which is built parallel to the shore, a finger pier is perpendicular to the shoreline.

In 1868, the Board of State Tidelands Commissioners had reserved China Basin for a future complex of wharves and piers. This complex was not built during the nineteenth century because there was no seawall south of Mission Creek. Acknowledging that there were no foreseeable plans to build a seawall along this part of the waterfront, in 1895, the Board leased the still-submerged China Basin reservation to the San Francisco & San Joaquin (SF&SJ) Railroad for 50 years. In the five years that it controlled the property, the SF&SJ, better known as the "Valley Railroad," did nothing with China Basin. When the ATSF acquired Claus Spreckels' San Francisco & San Joaquin (SF&SJ) Railroad in 1900, it negotiated a new 50-year lease to China Basin (1900–1950) with the state. The State Board of Harbor Commissioners, while agreeing to the terms offered by the ATSF, required that the railroad build a seawall around China Basin. The Board also reserved the right to eventually build piers at China Basin.

ATCHISON TOPEKA & SANTA FE RAILROAD ACQUIRES CHINA BASIN: 1898–1900

The Southern Pacific enjoyed a monopoly in San Francisco that lasted more than three decades. This monopoly came to a close in 1898 with the ATSF's announcement that the railroad would build a competing line into the Bay Area. In 1900, the ATSF completed its western railhead in Richmond. Though San Francisco was eventually to be the western terminus of the line, there was no way to get to the city without using Southern Pacific tracks. The ATSF therefore decided to use ferries to get its trains to San Francisco. To do this, the ATSF bought SF&SJ Railroad, giving it access to the smaller railroad's lease on China Basin where the ATSF planned to build its San Francisco terminus. The ATSF also took on the Southern Pacific in the arena of property development, buying and developing land in and around Mission Bay under the aegis of its real estate subsidiary, the Santa Fe Land Improvement Company. In this way, the ATSF acquired the remaining unfilled portions of Mission Bay and also several undeveloped tracts on the eastern slope of Potrero Hill. The railroad then filled its section of Mission Bay by using rock and debris it removed from its Potrero Hill properties.

CONSTRUCTION OF THE ATSF RAIL YARD AT CHINA BASIN, 1900–1906

During its first few years of operation in San Francisco, the ATSF used the SF&SJ's old Spear Street Wharf as its San Francisco terminus. In 1901, in compliance with its agreement with the State Board of Harbor Commissioners, the ATSF began building a seawall at China Basin. By the end of 1902, a 2,000-foot-long seawall enclosed most of Seawall Lot 337, marking the first filling of the proposed project site. While the seawall was under construction, the ATSF began building a car ferry slip at the northeast corner of the proposed project site, approximately where the statue of Willie McCovey is now. From the car ferry slip, the railroad could transport rail cars on barges across the Bay to and from its transcontinental railhead in Richmond. Once the barges arrived at China Basin the rail cars were sorted in the ATSF's rail yard and then transported to their ultimate destinations along the company's growing network of street-level tracks.

By 1905, ATSF's network of tracks ran as far south as Islais Creek, with spurs fanning out throughout Mission Bay to dozens of factories, warehouses, and other ATSF-owned and leased properties in San Francisco's growing industrial and wholesale district. In 1906, the ATSF started building a pair of huge freight sheds on its property. The first, a "receiving shed," measuring 600 feet long, with a platform extension adding another 500 feet, was built along a recently completed extension of Kentucky Street (now Third Street). The ATSF built an even larger "delivery shed" 40 feet east of the receiving shed. This shed measured almost 1,200 feet long, including its open-air freight platform. Designed by ATSF chief engineer R.B. Burns, both sheds were utilitarian wood-frame structures, clad in corrugated iron siding.[9] Other site improvements included a wood-plank driveway leading into the site from the recently replaced Third Street Bridge (the old one had been destroyed in the 1906 earthquake) and a wharf along San Francisco Bay. The 1913 Sanborn maps for San Francisco indicate that the southern boundary of the ATSF's China Basin property ran along a northeasterly angle, indicating why today's Mission Rock Street followed a similar alignment until recently straightened. In addition to the two freight sheds, the Sanborn maps illustrate a car ferry terminal at the northeast corner of the site as well as tracks, linking the slip with the warehouses and several parallel rail sidings.

MISSION BAY, 1906–1924

Completed in 1906, the ATSF used its China Basin rail yard for the next two decades without any major changes. Meanwhile, the surrounding Mission Bay area was undergoing considerable change as the Southern Pacific Railroad and the Board of State Harbor Commissioners made improvements to their facilities. By the 1920s, San Francisco's previously unchallenged position as the pre-eminent port on the Pacific Coast was threatened by expanding port facilities in Seattle, Portland, Los Angeles/Long Beach, and Oakland. Unfortunately for San Francisco, there was not sufficient room to expand its congested port facilities along the Northeast Waterfront north of Mission Creek. The Port was also prevented from expanding south of Mission Creek by the privately owned Bethlehem Shipbuilding's San Francisco shipyard. The only substantial areas left along the waterfront for expansion were India Basin, which was located far away from the rest of the piers in the Bayview-Hunters Point District; China Basin, which was leased to the ATSF; and a small area of bay front near Fisherman's Wharf. As early as 1916, the Board of State Harbor Commissioners drew up plans for new pier facilities at both China Basin and Fisherman's Wharf —the last easily accessible sections of the waterfront with deep water access.

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[9] The two ATSF freight sheds built in 1906 were demolished by H & H sometime in the 1970s. (VerPlanck Historic Preservation Consulting. 2016. *Historic Resource Evaluation (HRE), Seawall Lot 337 and Pier 48 Mixed-Use Development Project, San Francisco, California*. April, p. 42).

DESIGN AND CONSTRUCTION OF PIER 48, 1924–1930

Beginning in 1924, the Board of State Harbor Commissioners started building a new reinforced-concrete bulkhead wharf between what are now Piers 50 and 52. Around the same time, the Board began making plans to replace the ATSF bulkhead wharf at China Basin, an old wood structure dating back to 1906. Completion of the bulkhead wharf would be necessary before any new piers could be built at China Basin. The concrete bulkhead wharf was completed on July 17, 1929. With the bulkhead wharf completed, the Board of State Harbor Commissioners could finally build its new piers at China Basin. Plans for Pier 48 were completed in April 1926 under the direction of Chief Engineer Frank G. White.

Construction of Pier 48's substructure got underway in 1928. The two transit sheds (Sheds A and B) were completed in 1929–1930. At 369 feet in width, the new pier contained two wide transit sheds separated by an open-air "valley" for easy access by both trucks and trains. Identical to their counterpart at Pier 45, the bulkhead buildings were designed in the Tudor/Gothic Revival style and looked much as they do today. Virtually all of the older piers along the Embarcadero had bulkhead buildings designed in either the Beaux Arts style (north from the Ferry Building to Fisherman's Wharf) or the Mission revival style (south from the Ferry Building to Mission Creek). Aside from several piers that did not have bulkhead buildings, this left only Piers 45 and 48 that were designed in the Tudor/Gothic Revival style. Pier 50, which was largely built after World War II, was designed in a nondescript utilitarian style without any historicist references.

SUBSEQUENT HISTORY OF PIER 48, 1930–PRESENT

Pier 48's design reflected the latest thinking in break-bulk shipping. Vessels could berth on three sides of the structure, instead of only two sides like most of the older piers. Internal rail spurs on the north and south aprons and in the valley between the two sheds provided easy access for both trucks and State Belt Line Railway trains. Pier 48 represented the next generation of piers, and in the 1924–1926 *Biennial Report,* the Board of State Harbor Commissioners announced its plans to build more like it.

Completed at the onset of the Depression, Pier 48 was not heavily used during its first three years of existence. By the mid-1930s, Pier 48 was leased by two steamship companies that specialized in Pacific Coast shipping: Swayne & Hoyt Lines Ltd. and the Balfour-Guthrie Company. Not even five years after its completion, Pier 48 received its first substantial alteration. Originally the valley between Sheds A and B extended all the way from the bulkhead wharf to the outshore end of the pier. To create more covered storage space, the far eastern end of the pier was decked over, and a connecting transit shed (Shed C) was built between the outshore ends of Sheds A and B.

By 1937–1938, the study area was entirely devoted to port and railroad facilities, including piers, rail yards, and warehouses. Just west of Pier 48 was the ATSF rail yard, with its freight sheds and acres of rail sidings. Just south of Pier 48 was the earliest part of Pier 50, originally known

as the Mission Rock Terminal. West of Third Street several Southern Pacific freight sheds were situated on what is now Mission Bay Block 1. The Southern Pacific's warehousing facilities were augmented by the China Basin Building on the north side of Mission Creek. Aside from the Third and Fourth Street bridges and the San Francisco Fire Department (SFFD) Engine Company No. 30 firehouse, no other buildings or structures within the study area today were present in 1937–1938.

From 1945 until 1956, Pier 48 was leased by a different pair of intercoastal shipping lines: Isthmian Steamship Company (Shed A) and Calmar Steamship Company (Shed B). These were the last known maritime freight operations to occupy Pier 48. The decline of business at Pier 48 reflected larger structural problems with the Port of San Francisco and the resulting exodus of most maritime shipping companies to the East Bay. The death knell to the Port of San Francisco came in the 1960s with the advent of containerized shipping. San Francisco's older finger piers, designed for labor-intensive break-bulk[10] cargo, were rendered instantly obsolete. One by one, during the late 1960s, San Francisco's piers went dormant.

By the early 1970s, Pier 48 was used for parking and general-purpose warehousing. By this time the pier was almost exclusively accessed by trucks because the aprons had been allowed to fall into such disrepair that they were no longer usable. The reorientation toward land-based transportation is indicated by the enlargement of several doors on Sheds A and B in 1977 to accommodate the height of tractor trailers. A 1996 fire destroyed the eastern end of Pier 48, wrecking the eastern third of Sheds A and B and all of Shed C. Between 1999 and 2000, the damaged sections of the sheds were rebuilt by the Port. In 2002, the substructure[11] underwent a partial seismic retrofit and in 2006 the aprons underwent several unidentified repairs. Since 2005, Shed A has been rented on an ad hoc basis by various organizations for hosting parties, charitable events, and corporate gatherings. In 2008, the Board of Elections began leasing Shed B for storing its voting equipment and vehicles.

SUBSEQUENT HISTORY OF SEAWALL LOT 337, 1930–PRESENT

Following the economic stagnation of the Depression, World War II prompted increased activity at the ATSF's China Basin rail yard. The company's facilities were badly needed for shipping war material overseas and serving other operational needs of the U.S. military. However, after the war, the China Basin rail yard continued to decline along with the Port of San Francisco. The ATSF continued to utilize Seawall Lot 337 as its main San Francisco rail yard until its lease expired in 1950. By 1950, the two 1906 freight sheds had received additions extending them southward by several hundred feet. In addition, several office buildings had been built next to the car ferry slip at the northeast corner of the site.

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[10] "Break bulk" refers to a system of transporting cargo as separate pieces rather than in containers.

[11] "Substructure" refers to the underlying and supporting structure of Pier 48.

In 1950, the Board of State Harbor Commissioners leased the former ATSF rail yard at Seawall Lot 337 to H&H Ship Service, a freight forwarding company that used it for truck-based freight storage and shipping until the early 1990s. H&H Shipping vacated the site in 1996. Based on a comparison of historic and contemporary aerial photographs taken in 1968 and 1980, H&H demolished the two 1906 ATSF freight sheds in the 1970s. H&H Shipping Service built several dozen corrugated steel shops and warehouses on the site in the time that it leased the property, but all of these buildings and the previously constructed office buildings were demolished in 1999 when Seawall Lot 337 was converted into a parking lot to service patrons of AT&T Park, which opened in 2000.

MISSION BAY REDEVELOPMENT AREA

In 1983, the Santa Fe Pacific Realty Company, the property management wing of the ATSF, proposed to redevelop its former rail yard south of Mission Rock Street with a mixed-use commercial and residential project. An attempt to develop the Mission Bay area, including Seawall Lot 337, in the early 1990s through a development agreement did not succeed, and the development agreement was terminated. In 1998, the San Francisco Redevelopment Agency and the Board of Supervisors established two redevelopment areas and approved the Mission Bay North and Mission Bay South Redevelopment Plans. The redevelopment areas and plans, which did not include the project site, called for the construction of 6,000 new residential units, approximately 50 acres of parkland, 6 million gross square feet (gsf) of commercial space, and a 43-acre campus for the University of California, San Francisco (UCSF).

Since 1998, Mission Bay has been mostly built out. Development began north of Mission Creek with several apartment buildings and condominiums built along Townsend, King, and Berry streets in the early 2000s. These were followed shortly thereafter by the new UCSF campus built near the center of the redevelopment area. Completion of the rest of the plan was slowed by the Dotcom crash of 2000 and the implosion of the national housing market in 2008. Construction of several new mid-rise and high-rise apartment and condominium complexes to the south and west of the project site as well as commercial complexes farther to the south resumed in 2010. Recent or planned developments in the Mission Bay South area include a new UCSF Medical Center (the first phase completed in 2015) and the Chase Center, which will include an 18,000-seat arena for the Golden State Warriors (construction began in January 2017).

ARCHEOLOGICAL SENSITIVITY

To assess the potential for encountering buried archeological resources (referred to here as *archeological sensitivity*) during project development, historical maps, archival data, previous shoreline studies, and logs of previous geotechnical bores (excavated as part of the project's geotechnical investigations[12]) were reviewed. The results of this analysis are presented below.

[12] Treadwell & Rollo. 2011. *Preliminary Geotechnical Investigation, Seawall Lot 337 – Mission Bay, San Francisco, California*. Prepared for Mission Rock Development.

A review of archival research and previous archeological studies revealed that there are no known archeological sites in the project area. The project area lacked any structures (i.e., piers, wharves) prior to the early 1900s. Thereafter, the extant seawall lot, which is thought to have been filled primarily with serpentine rock, and pier were built. Although some infrastructure elements from the lot and wharf pier may still be extant, they are unlikely to be, or contain, significant archeological deposits. A search of the shipwrecks database indicated that, of known shipwrecks, the closest wrecks are nearly 0.5 mile from the project area boundary. The *Fanny Adele*, an 1883 three-masted schooner, sank in 1904 after an explosion; the ship is mapped approximately 0.44 mile south of the project area, between South Street and 16th Street, 550 feet east of the shoreline. Three wrecks are mapped approximately 0.49 mile north of the project area, immediately northeast of Pier 38. The steamship *Santa Clara* burned and sank in 1851, the *Alice Garrett* parted moorings and sank in 1888, and the schooner *West Wind* suffered a collision and sank in 1876.[13]

As described in Section 4.M, *Geology and Soils*, logs of the geotechnical bore within the project site reveal widespread anthropogenic fill deposits, which are underlain by tidal flat deposits, which are in turn underlain by silts and sands of various origins. The presence of tidal flat deposits under fill deposits is consistent with the historic context presented earlier in the section, which indicated that the project site was located seaward of the pre-development shoreline. Anthropogenic fill deposits at the project site range from 10 to 40 feet thick across the portion of the site located west of the seawall and exhibit a north-facing, or seaward-dipping, slope. Fill deposits do not appear to be present east of the seawall. Below the anthropogenic fill deposits and in areas where fill deposits are not present, intertidal flat deposits are present. The tidal flat deposits extend to depths ranging from 50 to 85 feet below mean sea level. Based on the sea-level curve established for the Bay Area (Atwater et al.),[14] the project area appears to have been a tidal flat since between 7,800 and 8,700 years ago. During that time, the project area would have been inundated with water and not suitable for human habitation and resource processing. Sands and silts, inferred to be of multiple depositional origins, are present below the tidal flat deposits. Based on the results of other nearby geotechnical investigations, these deposits are thought to be part of the Colma formation (terrestrial sediments that were deposited during the Wisconsin glaciation, approximately 85,000 to 11,000 years ago). Colma formation deposits are underlain by Old Bay Mud (estuarine sediments that were deposited during the Sangamon interglacial period, prior to 85,000 year ago). Based on the information presented above, prior to the period between 7,800 and 8,700 years ago, the project site would have been subaerially[15] exposed, making it suitable for human habitation and resource processing.

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13 California State Lands Commission. 2015. *California Shipwrecks*. Available: http://www.slc.ca.gov/Info/Shipwrecks.html. Accessed: February 6, 2014.

14 Atwater, B.F., C.W. Hedel, and E.J. Helley. 1977. *Late Quaternary Depositional History, Holocene Sea-Level Changes, and Vertical Crustal Movement, Southern San Francisco Bay, California*. Geological Survey Professional Papers 1014. U.S. Geological Survey, Washington DC.

15 "Subaerial" features are located on or near the earth's land surface and exposed to the atmosphere.

Based on the information presented above, it is considered unlikely that the project area contains significant historic-period archeological resources. However, there remains the possibility for ship hulls or shipwrecks to be present within the project area, although none have been recorded in the immediate project area, as described above. The tidal flat deposits that underlay the fill within the project area have limited archeological sensitivity, except for possible infrequent occurrences of pre-contact intertidal fishing facilities and isolated fishing gear. Deposits at the interface between the intertidal flats and the underlying Colma formation are sensitive for archeological resources because this interface would have been subaerially exposed and suitable for both habitation and resource processing during the middle of the Holocene epoch. This interface ranges from approximately 50 to 85 feet below mean sea level. Based on this analysis and the discovery of two deeply buried Middle Holocene sites in San Francisco, the project site has moderate potential for the discovery of significant prehistoric archeological resources.

EXISTING CONDITIONS

OFFSITE CEQA HISTORICAL RESOURCES LOCATED WITHIN THE STUDY AREA

The study area for historical resources comprises a variety of structures in the vicinity of the project site, encompassing an approximately one-block radius of the site. The following offsite structures were surveyed and evaluated in the HRE to document whether they are recognized historical resources or may qualify as historical resources for purposes of the CEQA evaluation:

- Pier 50/Mission Rock Terminal (Block 3899/Lot 001, Block 9900/Lot 050),
- Pier 50 Office/Administration Building (Block 3899/Lot 001; Block 9900/Lot 050),
- Mariposa-Hunters Point Yacht Club (Block 9900/Lot 050H),
- Pier 52 (Block 9900/Lot 052),
- Bay View Boat Club (Block 9900/Lot 052),
- ATSF car ferry slip (Block 9900/Lot 052),
- Radiance and Madrone condominium complexes (Block 8720/Lot 117-448),
- 540 Mission Bay Boulevard North (Block 8711/Lot 226),
- San Francisco Police Department's Public Safety Building (Block 8719/Lot 007),
- SFFD Engine Company No. 30 (Block 8719/Lot 007),
- Strata and Channel Mission Bay apartment complexes (Block 8711/Lot 023),
- Parking Lot D (Block 8714/Lot 002, Block 8715/Lot 006, Block 8715/Lot 009-207, Block 8715/Lot 007, Block 8715/Lot 008, Block 8715/Lot 208-360),
- Fourth Street Bridge (Block/Lot N/A),

- China Basin Building (Block 3803/Lot 005),
- AT&T Park (Block 3794/Lot 003-028), and
- Lefty O'Doul/Third Street Bridge (Block/Lot N/A).

Of the 16 offsite buildings and structures surveyed, the HRE found that five qualify as either known or potential historical resources. Third Street/Lefty O'Doul Bridge is a known historical resource; Pier 50 Office Building, the ATSF car ferry slip, Public Safety Building/SFFD Engine Company No. 30, and Fourth Street/Peter Maloney Bridge are potential historical resources, which are treated as CEQA historical resources in this Environmental Impact Report (EIR) on the basis of their age and apparent historical integrity. All five known or potential historical resources are described in more detail below and shown in Figure 4.D-1, on the following page. (In addition to these five, Pier 48 on the project site, which is a known historical resource on the project site, is also discussed in more detail below.)

As more fully described under *Regulatory Framework*, CEQA Section 21084.1, and State CEQA Guidelines Section 15064.5, a historical resource under CEQA is defined as a resource that is listed in or determined to be eligible for listing in the California Register of Historical Resources (California Register). Resources that are not listed but are included in a local register of historical resources or identified as significant in a historical resource survey that meets the requirement of Section 5024.1(g) of the Public Resources Code (PRC) are presumed to be historically significant. Also, a lead agency may determine that other resources are historically significant if it determines that there is substantial evidence that a resource meets criteria for listing in the California Register. The analysis undertaken in the HRE considered these criteria in determining historical or potential historical resources in and near the project site.

The following discussion provides a brief summary for each offsite building/structure within the study area that was found to qualify as either a known or potential historical resource, as defined by CEQA. Details about the evaluation of the remaining structures can be found in the HRE.

THIRD STREET/LEFTY O'DOUL BRIDGE

The Third Street Bridge, better known as Lefty O'Doul Bridge, spans Mission Creek between the China Basin Building and AT&T Park. The bridge, named for Francis Joseph "Lefty" O'Doul, the famous San Francisco–born baseball player, opened in 1933. Lefty O'Doul Bridge is a 140-foot-long, riveted steel heel-trunnion drawbridge with a single-leaf bascule truss in the main span and a concrete counterbalance at the north end. The bridge is supported by a concrete substructure that rests on timber pilings. Identified in several waterfront surveys in the 1990s and 2000s, Lefty O'Doul Bridge is part of an eligible National Register of Historic Places (National Register) historic district, which qualifies it as a CEQA historical resource. According



Sources: Seawall Lot 337 Associates, LLC, 2014; VerPlanck, 2016

Graphics ... 00336.13 (3-24-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 4.D-1
Historical or Potentially Historical Resources in the Study Area

to the HRE, the district consists of the bridge itself, a traffic control gate, the bridge operator's house, and the watchman's house. The bridge is designated San Francisco Landmark No. 194 under Article 10 of the City Planning Code, which is a recognized local register of historical resources. Therefore, this property is a CEQA historical resource (see California PRC Section 21084.1 and Section 15064.5 of the State CEQA Guidelines).

PIER 50 OFFICE BUILDING

Located just south of Pier 50 is a two-story office building at 401 Terry A. Francois Boulevard, referred to as the Pier 50 Office Building. This building is owned and operated by the Port, but its origin is unknown. Though it does not appear on the 1950 Sanborn maps, it does superficially resemble several of the earlier bulkhead buildings at Pier 50, suggesting that it was built at the same time, probably in 1953. The building is of wood-frame construction, and its exterior is finished in stucco and punctuated by a grid of double-hung wood windows. The exterior of the building is utilitarian with no applied ornament aside from shallow bezel moldings defining the windows and some simple Moderne moldings flanking the primary entrance. The primary façade is centered on an extruded pavilion containing the primary entrance. The second-floor cantilevers out slightly beyond the first floor. The interior consists of two floors of offices leased to a variety of businesses. The relatively unaltered building appears to be in good condition.

The Pier 50 Office Building has no formal historic status at the national, state, or local level. It has not been evaluated in any of the waterfront surveys conducted in the 1990s or 2000s, probably because it was not yet 50 years old when the surveys were conducted. Based on its age, use, and evident integrity, the Pier 50 Office Building may meet the criteria for listing in the California Register and thus is considered a potential historical resource under CEQA.

ATSF CAR FERRY SLIP

The former ATSF car ferry slip is southeast of the Bay View Boat Club, between Piers 52 and 54. The facility consists of a large, fork-shaped pier covered in wood decking. Located near the mid-point of the structure is a large, steel-frame freight tower consisting of a pair of smaller metal truss towers, each capped by a pulley wheel.[16] The towers are connected by cross beams that straddle a pair of rail sidings that run the length of the pier. The outshore end of the pier is lined with tall wood fenders designed to protect the slip from collisions. The ATSF car ferry slip was built around 1950, shortly after the railroad's lease on Seawall Lot 337 expired. The structure served the fleet of tugs and barges that carried freight cars between the railroad's main railhead in Richmond and San Francisco for almost 35 years, closing in 1984. The structure appears to be in poor-to-fair condition.

[16] A "pulley wheel" is a grooved device that is used with rope or chain to lift objects.

The ATSF car ferry slip does not have any formal historic status at the national, state, or local level. Though inventoried in Carey & Company's 1994 Southern Waterfront Survey, the structure was not assigned a status code, probably because it was not yet 50 years old. The structure appears to meet the criteria for listing in the California Register and thus qualifies as a CEQA historical resource on the basis of its historic use and as a rare physical remnant of the infrastructure built by the ATSF to transport train cars from its main East Bay railheads to San Francisco.

PUBLIC SAFETY BUILDING/SFFD ENGINE COMPANY NO. 30

The western half of Mission Bay Project Area Block 9, which is bounded by China Basin Street to the south, Third Street to the west, Terry A. Francois Boulevard to the east, and Mission Rock Street to the north, contains the recently completed San Francisco Police Department's (SFPD) Public Safety Building, designed by HOK and Cavagnero Associates. The facility provides a new 264,000 gsf command center for the SFPD as well as a new firehouse for the SFFD. The southwest corner of the property includes the old SFFD Engine Company No. 30 (built 1928), which has been rehabilitated as a community meeting facility.

The SFFD Engine Company No. 30 firehouse is a well-preserved example of a 1920s-era firehouse by City Architect John Reid, Jr. The firehouse does not have any formal historic status, and has not been inventoried in any cultural resources surveys, likely because it fell outside the boundaries of several waterfront surveys carried out in the 1990s and 2000s. Based on its age, its historic use, and its architecture, the SFFD Engine Company No. 30 firehouse appears to meet the criteria for listing in the California Register and thus qualifies as a CEQA historical resource.

FOURTH STREET/PETER MALONEY BRIDGE

The Fourth Street Bridge, officially known as the Peter Maloney Bridge, is a steel drawbridge spanning Mission Creek. Opened for use in 1917, the riveted steel truss drawbridge is counterbalanced by a 600-ton block of concrete. The facility includes a wood-frame bridge house to the west and a second wood-frame structure (unidentified origin and use) to the east. This latter structure appears to have been moved to the site between 1994 and 2013. The highly intact structure appears to be in good condition.

Though inventoried in Carey & Company's 1994 Southern Waterfront Survey, the Fourth Street Bridge was not assigned a California Historical Resource Status Code and it does not have any formal historic status at the national, state, or local level. However, based on its age, design, and apparent level of integrity, the Fourth Street Bridge appears to meet the criteria for listing in the California Register and thus qualifies as a CEQA historical resource.

CEQA HISTORICAL RESOURCES LOCATED WITHIN THE PROJECT SITE

According to the Historic Resource Evaluation Response prepared by the Planning Department for the Seawall Lot 337 and Pier 48 Mixed-Use Development Project (dated April 8, 2016),[17] one CEQA historical resource is located within the project site. The Port of San Francisco Embarcadero Historic District is listed on the National Register and includes 24 contributing buildings and 26 structures. Within the project site, Pier 48, the seawall, and the bulkhead wharf are contributing resources and within the Port of San Francisco Embarcadero Historic District (described below). No other part of the project site appears to meet the definitional thresholds for a "historical resource" under Section 21084.1 of CEQA and Section 15064.5 of the State CEQA Guidelines. Seawall Lot 337 is a surface parking lot constructed ca. 1999. It has no architectural or historical significance. China Basin Park, which was opened to the public in 2001, is also less than 50 years old and lacks historical significance.

PORT OF SAN FRANCISCO EMBARCADERO HISTORIC DISTRICT

As shown in Figure 4.D-2, on the following page, the project site is at the southernmost end of the Port of San Francisco Embarcadero Historic District, which encompasses an approximately 3-mile-long stretch of San Francisco's waterfront, running from Pier 45 at the north end to Pier 48 at the south end. The historic district contains 50 contributing resources, including the seawall, bulkhead wharf, and most of San Francisco's remaining finger piers as well as the Ferry Building, the Agriculture Building, the Fireboat House, and other buildings and structures associated with the development and operation of the Port of San Francisco from the late nineteenth century until the end of World War II.

The Port of San Francisco Embarcadero Historic District was listed on the National Register in 2006 and designated under National Register Criterion A (Events) for the period of significance from 1878–1946 under the following areas of significance:

a) Government, for its association with the State Board of Harbor Commissioners.

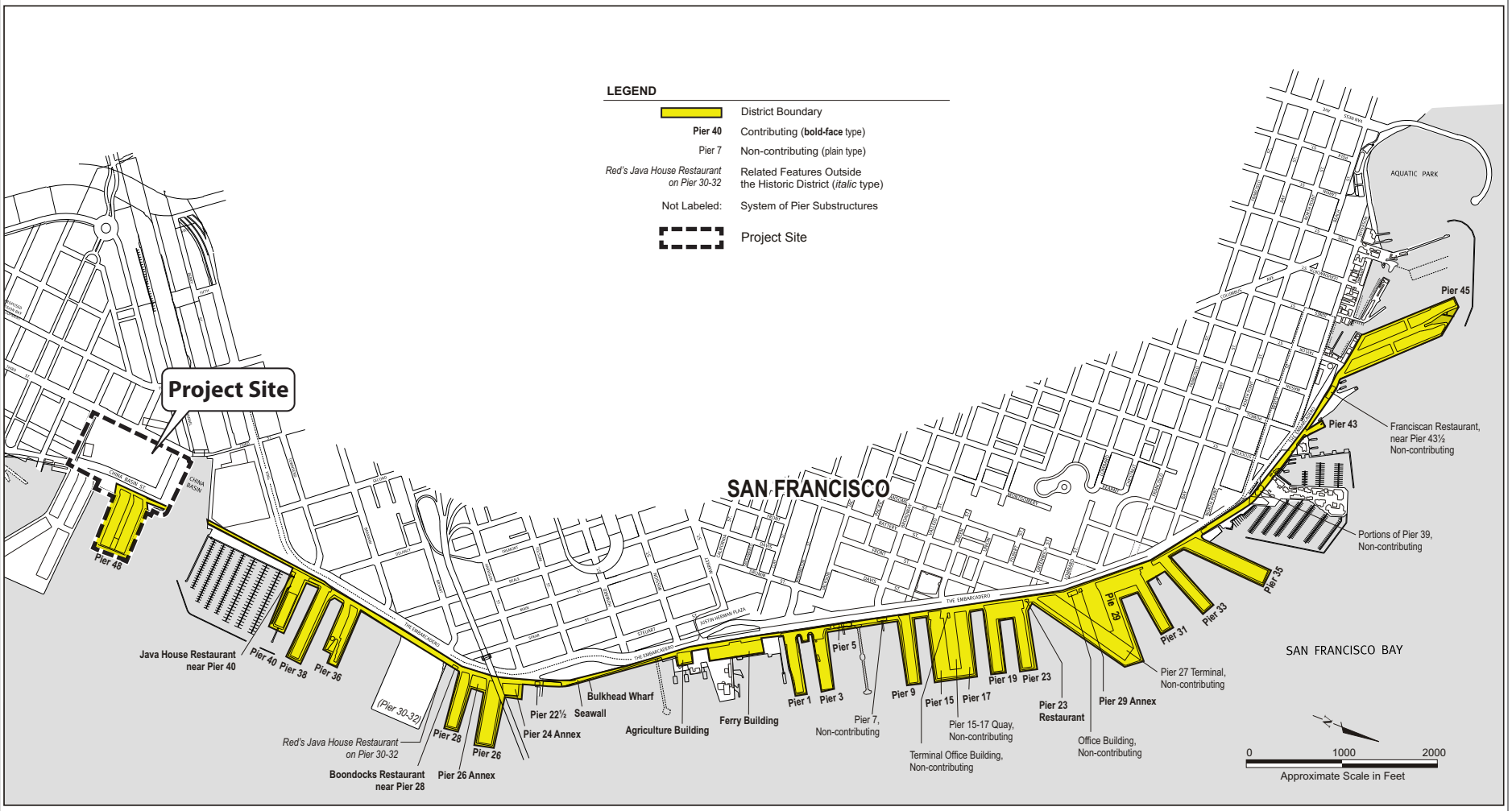
b) Commerce, for its role in the economic development of San Francisco and California.

c) Transportation, as the focus of local and long-distance transportation in San Francisco, including transportation involving ships, ferries, railroads, trucks, and street cars.

d) Labor, for its association with the General Strike of 1934 (period of significance limited to 1934).

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[17] The Historic Resource Evaluation Response prepared by the San Francisco Planning Department concurs with the findings of the Historic Resource Evaluation prepared for the project by VerPlanck Historical Consulting (dated April 11, 2016). See the HRE for further detail.



January 2006

SKETCH MAP
PORT OF SAN FRANCISCO
EMBARCADERO HISTORIC DISTRICT

Sources: National Park Service, 2006.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 4.D-2
Port of San Francisco Embarcadero Historic District

The district is also listed under Criterion B (Persons) for its association with famed International Longshoremen's Association (ILA) leader Harry Bridges, a pivotal figure in the 1934 Waterfront Strike and subsequent labor actions in San Francisco. The period of significance under Criterion B is limited to 1934.

Finally, it is designated under Criterion C (Design/Construction) for the following areas of significance: Engineering, as a rare and late example of an important type of port. The period of significance for this area is 1878–1946 under the following areas of significance:

a) Architecture, as a representative of the City Beautiful Movement. The periods of significance for this area of significance are 1898–1903 and 1912–1938.

b) Community Planning and Development, for its contribution to the shape and character of San Francisco. The period of significance for this area of significance is 1878–1938.

The district-wide period of significance is 1878 to 1946. The Port of San Francisco Embarcadero Historic District's listing on the National Register qualifies it as a CEQA historical resource.

PIER 48

The eastern part of the project site contains Pier 48. The pier extends out into San Francisco Bay between China Basin and Pier 50/Mission Rock Terminal. Pier 48 is a historic reinforced-concrete finger pier, built in 1928–1930 at the southern end of the line of piers that once defined the entire Northeast Waterfront from Fisherman's Wharf to China Basin. Pier 48 consists of a bulkhead wharf, two bulkhead buildings, and three transit sheds (Sheds A, B, and C). The Planning Department has determined that Pier 48 is the southernmost contributor to the Port of San Francisco Embarcadero Historic District and the only contributor south of Mission Creek.[18] As a contributor to a National Register historic district, Pier 48 is listed in the California Register and therefore considered a historical resource under CEQA.

The character-defining features of Pier 48 include its U-shaped plan, consisting of three sheds (A, B, and C) arranged around an internal court, or valley; its articulation as three major elements (substructure, bulkhead building, and transit shed); its concrete and stucco exterior finishes; the Tudor/Gothic Revival ornamentation on the bulkhead buildings; the articulation of the exterior walls of the transit sheds (a semi-regular grid of rectangular openings); the steel industrial windows on the bulkhead building and within the transoms and monitor; and the monitor roof itself. Within the interior of the transit sheds, the primary character-defining features include the poured-in-place concrete walls, exposed structural system of wood columns and trusses, the articulation as a raised central "nave" flanked by lower side aisles, and the largely double-height and open-air quality that results in long, open sightlines.

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[18] San Francisco Planning Department. 2016. *Historic Resource Evaluation Response for Seawall Lot 337 & Pier 48 Mixed-Use Development Project, Case No. 2013.0208E*. March 29.

Though as a whole it is a contributor to the district, the eastern third of the pier, including the outshore ends of Sheds A and B and all of Shed C, were destroyed by fire in 1996. Reconstructed in 1999-2000 to superficially resemble pre-fire conditions, neither the structural system nor the cladding materials of the reconstructed sections are historic character-defining features of the resource. Even so, the resource retains sufficient historical integrity to convey its historical significance and qualify as a contributor to the National Register-listed Port of San Francisco Embarcadero Historic District.

BULKHEAD WHARF

Pier 48's bulkhead wharf was constructed in 1928-1929 between Pier 50 and China Basin. It measures 53 feet wide by 500 feet long and extends 38 feet beyond the waterfront line into the Bay. From the seawall to its outshore end, the bulkhead wharf is supported on several rows of six piles that span the underside of the pier from north to south. The innermost four piles in each row are concrete-jacketed eucalyptus and the outer two are solid concrete. Additional supports include curved concrete struts that help support the decommissioned rail spurs that once entered the site from Terry A. Francois Boulevard. The bulkhead wharf is hidden from view by Pier 48's bulkhead buildings, which cover most of it, as well as asphalt paving, which conceals the rest.

REGULATORY FRAMEWORK

FEDERAL

NATIONAL HISTORIC PRESERVATION ACT AND NATIONAL REGISTER OF HISTORIC PLACES

Archeological and architectural resources (buildings and structures) are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 United States Code [USC] 470f) and its implementing regulations: Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), the Archeological and Historic Preservation Act of 1974, and the Archeological Resources Protection Act of 1979.

Prior to implementing an *undertaking* (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies (e.g., U.S. Army Corps of Engineers, National Park Service) to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing on the National Register.

The National Register is the nation's official comprehensive inventory of historic resources. Administered by the National Park Service, the National Register includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archeological, or cultural significance at the national, state, or local level. Typically, a resource

over 50 years of age is eligible for listing on the National Register if it meets any one of the four eligibility criteria *and* if it retains sufficient historical integrity. A resource less than 50 years old may be eligible if it can be demonstrated that it is of "exceptional importance" or if it is a contributor to a historic district. National Register criteria are defined in depth in *National Register Bulletin Number 15: "How to Apply the National Register Criteria for Evaluation*."

There are four criteria under which a structure, site, building, district, or object may be eligible:

- **Criterion A (Event):** Properties associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B (Person):** Properties associated with the lives of persons significant in our past;
- **Criterion C (Design/Construction):** Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components lack individual distinction; and
- **Criterion D (Information Potential):** Properties that have yielded, or may be likely to yield, information important in prehistory or history.

A resource can be significant to American history, architecture, archeology, engineering, and/or culture at the national, state, or local level. In addition to meeting at least one of the four criteria, a property or district must retain integrity, meaning that it must have the ability to convey its significance through the retention of seven aspects, or qualities, that in various combinations define integrity:

- **Location**: Place where the historic property was constructed;
- **Design:** Combination of elements that create the form, plans, space, structure, and style of the property;
- **Setting:** The physical environment of the historic property, inclusive of the landscape and spatial relationships of the buildings;
- **Materials**: The physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property;
- **Workmanship:** Physical evidence of the crafts of a particular culture or people during any given period in history;
- **Feeling:** The property's expression of the aesthetic or historic sense of a particular period of time; and
- **Association**: Direct link between an important historic event or person and an historic property.

SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION AND ILLUSTRATED GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

The Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (the SOI Rehabilitation Standards and the SOI Guidelines, respectively) provide guidance for reviewing work to historic properties.[19] Developed by the National Park Service for reviewing certified rehabilitation tax credit projects, the SOI Rehabilitation Standards have been adopted by local government bodies across the country for reviewing proposed work to historic properties under local preservation ordinances. The SOI Rehabilitation Standards provide a useful analytical tool for understanding and describing the potential impacts of changes to historic resources, including new construction inside or adjoining historic districts.

STATE

The State of California implements the NHPA through its statewide comprehensive cultural resource preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation (DPR), implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historical Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdiction.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA, as codified in PRC Sections 21000 *et seq*. and implemented via the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 *et seq.*), is the principal statute governing the environmental review of projects in the state. In order to be considered a historical resource, it generally must be at least 50 years old. Section 21084.1 of CEQA and Section 15064.5 of the State CEQA Guidelines define a historical resource for purposes of CEQA.

[19] U.S. Department of Interior, National Park Service, Cultural Resources, Preservation Assistance Division. 1992. *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings*. The standards, revised in 1992, were codified as 36 CFR Part 68.3 in the July 12, 1995, *Federal Register* (Vol. 60, No. 133). The revision replaces the 1978 and 1983 versions of 36 CFR 68 entitled *The Secretary of the Interior's Standards for Historic Preservation Projects*. The 36 CFR 68.3 standards are applied to all grant-in-aid development projects assisted through the National Historic Preservation Fund. Another set of standards, 36 CFR 67.7, focuses on "certified historic structures," as defined by the IRS Code of 1986. The standards in 36 CFR 67.7 are used primarily when property owners are seeking certification for federal tax benefits. The two sets of standards vary slightly, but the differences are primarily technical and nonsubstantive in nature. The guidelines, however, are not codified in the *Federal Register*.

A historical resource includes:

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

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The California Register criteria are based on National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by CEQA to be automatically included in the California Register, including California properties formally eligible for or listed on the National Register. To be eligible for the California Register as a historical resource, a prehistoric or historic-period resource must be significant at the local, state, and/or federal level under one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (Events);
- Is associated with the lives of persons important in our past (Persons);

- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values (Design/Construction); or,
- Has yielded, or may be likely to yield, information important in prehistory or history (Informational Potential) [14 CCR Section 4852(b)].

For a resource to be eligible for the California Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

CEQA requires lead agencies to determine if a proposed project would have a significant effect on important historical resources or unique archeological resources. If a lead agency determines that an archeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 would apply. If an archeological site does not meet the State CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archeological resources. A unique archeological resource is an archeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria.

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person [PRC Section 21083.2 (g)].

The State CEQA Guidelines note that if a resource is neither a unique archeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (State CEQA Guidelines Section 15064.5[c][4]).

LOCAL

SAN FRANCISCO GENERAL PLAN

The San Francisco General Plan Urban Design Element addresses historic preservation and includes the following relevant policies:

- Policy 2.4: Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.

- Policy 2.5: Use care in remodeling of older buildings, in order to enhance rather than weaken the original character of such buildings.
- Policy 2.6: Respect the character of older development nearby in the design of new buildings.

The San Francisco General Plan Housing Element includes the following policy relevant to historic preservation:

- Policy 11.7: Respect San Francisco's historic fabric, by preserving landmark buildings and ensuring consistency with historic districts.

SAN FRANCISCO PLANNING CODE

The City and County of San Francisco's commitment to historic preservation is codified in Section 101.1(b) of the Planning Code, which establishes eight General Plan priority policies. Priority Policy 7 of Section 101.1(b) of the Planning Code addresses the City's desire to preserve landmarks and historic buildings.

- Priority Policy 7: That landmarks and historic buildings be preserved.

SAN FRANCISCO HISTORIC PRESERVATION COMMISSION AND PLANNING CODE, ARTICLE 10

The San Francisco Historic Preservation Commission is a seven-member body that makes recommendations directly to the Board of Supervisors regarding the designation of landmark buildings, historic districts, and significant buildings. The commission also approves Certificates of Appropriateness for Landmarks and properties within Article 10 Historic Districts. The Historic Preservation Commission reviews and comments on CEQA documents for projects that affect historic resources as well as projects that are subject to review under Section 106 of the National Historic Preservation Act. In addition, the Historic Preservation Commission makes recommendations on building permit applications that involve construction, alteration or demolition of landmark sites and resources located within historic districts.

Article 10 of the Planning Code gives San Francisco the ability to identify, designate and protect historic landmarks from inappropriate alterations. Since the adoption of Article 10 in 1967, the City has designated 230 landmark sites and eleven historic districts.[20] The Francis "Lefty" O'Doul/Third Street Bridge is among these designated landmarks.

[20] City and County of San Francisco. 2014. *San Francisco Preservation Bulletin No. 9, San Francisco Landmarks*. Supplement No. 48, April–June.

PORT COMMISSION RESOLUTION 04-89 AND HISTORIC PRESERVATION REVIEW GUIDELINES FOR PIER AND BULKHEAD WHARF SUBSTRUCTURES

The Port of San Francisco Historic Preservation Review Guidelines for Pier and Bulkhead Wharf Substructures (Guidelines) identify how the SOI Rehabilitation Standards should be interpreted and applied to historic resources within the Port of San Francisco Embarcadero Historic District. The Guidelines are used in the review of pier and bulkhead wharf substructure projects that are subject only to approval by the Port. Projects that would affect Port of San Francisco Embarcadero Historic District resources and are subject to review and approval through any of the following agency programs are considered projects that have undergone SOI Rehabilitation Standards compliance review by those agencies and, therefore, are not subject to the Guidelines: (a) federal undertakings that require Section 106 consultation, (b) federal historic preservation tax credit projects that require State Office of Historic Preservation and National Park Service approvals, or (c) San Francisco Landmarks Preservation Advisory Board projects that are subject to Planning Code Article 10 provisions for City landmarks and City historic districts.

ENVIRONMENTAL IMPACTS

This section describes the impact analysis related to cultural resources for the project. It describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Cause a substantial adverse change in the significance of a historical resource, as defined in PRC Section 21084.1 and State CEQA Guidelines Section 15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code.
- Cause a substantial adverse change in the significance of an archeological resource pursuant to PRC Section 21083.2 and State CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in the significance of a tribal cultural resource, as defined in PRC Section 21074.[21]

[21] Note that this provision applies only to projects whose NOP was issued after July 1, 2015. The NOP for this project was issued in 2013, and thus, consultation under AB 52 is not applicable to this project. However, analysis of tribal resources is included below under Impact CP-4.

METHODS FOR ANALYSIS

This analysis of the proposed project's impacts on cultural resources is based primarily on information contained in the following reports: *Historic Resource Evaluation, Seawall Lot 337 and Pier 48 Mixed-Use Development Project, San Francisco, California*, and the associated Historic Resource Evaluation Response prepared by the Planning Department; *Geoarcheological Assessment for the Seawall Lot 337/Pier 48 Mixed-Use Project*; and the *Environmental Planning Preliminary Archeological Review: Checklist for the Mission Rock Pier 48 and Seawall Lot 337 Project.* The technical studies incorporate the results of archival research and site reconnaissance.

ARCHIVAL RESEARCH

Archival research was conducted in support of the project's historic resource evaluation and preliminary archeological review. This research consisted of reviewing historic documents and maps.

GEOARCHEOLOGICAL ASSESSMENT

The following sources were used to perform the geoarcheological assessment presented in the in the *Geoarcheological Assessment for the Seawall Lot 337/Pier 48 Mixed-Use Project*:

- Sanborn fire insurance maps;
- U.S. Coast and Geodetic Survey maps; and
- Boring logs and fence diagrams from previous geotechnical investigations in the project area.

This information was used to determine the location of the pre-development shoreline, whether the fill within the project area had sensitivity for buried historical archeological resources, and the depth of deposits and interfaces with sensitivity for buried prehistoric archeological resources.

NATIVE AMERICAN OUTREACH

On February 16, 2017, a letter was submitted to the Native American Heritage Commission (NAHC), requesting information on known Native American sacred lands within the project area. The NAHC responded on February 17, 2017, and indicated that a review of the sacred land file did not result in the identification of previously recorded properties within the project area. However, the NAHC noted that their records are not exhaustive, that their findings do not preclude the existence of Native American sacred lands in the project area, and provided a list of Native American tribes that have cultural and traditional affiliation with the project area vicinity to follow-up with. The listed tribes included the Costanoan Rumsen Carmel Tribe, Amah Mutsun Tribal Band of Mission San Juan Bautista, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, the Ohlone Indian Tribe, and the Indian Canyon Motsun Band of Costanoan. Letters

requesting information relating to known sacred lands in the project area vicinity were submitted to members of these tribes on March 2, 2017. Follow-up phone calls were made to these individuals on March 17, 2017. Three individuals were unable to be reached. Phone messages with a short project description and request for a call back were left when possible. Ms. Cambra, of the Muwekma Ohlone Indian Tribe, stated she had no concerns regarding the project or the sensitivity of the general project area but that if human remains were encountered the Muwekma be informed immediately. Ms. Sayers, of the Indian Canyon Mutsun Band of Coastnoan, stated she did not have any questions or concerns regarding the project.

IMPACT ANALYSIS

State CEQA Guidelines Section 15064.5(b) establishes the criteria for assessing a significant environmental impact on historical resources. It states that "[a] project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." The State CEQA Guidelines define "substantial adverse change in the significance of a historical resource" as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (Section 15064.5[b][1]). The significance of a historical resource, archeological or architectural, is considered to be "materially impaired" when a project demolishes or materially alters the physical characteristics that justify inclusion of the resource in the California Register, or a local register, or justify its eligibility for inclusion, as determined by the lead agency for the purposes of CEQA (Section 15064.5[b][2]).

The determination of whether an effect on an archeological resource is significant depends on the effect of the project on those characteristics of the archeological resource that make it significant. For an archeological resource that is an historical resource because of its prehistoric or historical information value, that is, its scientific data, a significant effect is impairment of the potential information value of the resource. An archeological resource may be California Register-eligible under other Evaluation Criteria, such as Criterion A, association with events that have made a significant contribution to the broad patterns of history; Criterion B, association with the lives of historically important persons; or Criterion C, association with the distinctive characteristics of a type, period, region, or method of construction. Appropriate treatment for archeological properties that are California Register-eligible under Criteria other than Criterion D may be different than that for a resource that is significant exclusively for its scientific value.

The depositional context of an archeological resource, especially soils stratigraphy can be informationally important to the resource in terms of datation and reconstructing the characteristics of the resource present at the time of deposition and interpreting the impacts of later deposition events on the resource. Thus, for an archeological resource eligible to the

California Register under Criterion 4, a significant adverse effect to its significance may not be limited to impacts on the artifactual material but may include effects on the soils matrix in which the artifactual matrix is situated.

Preservation in place is the preferred treatment of an archeological resource (CEQA and Guidelines Section 21083.2(b); 15126.4 (b)(3)(a)). When preservation in place of an archeological resource is not feasible, data recovery, in accord with a data recovery plan prepared and adopted by the lead agency prior to any soils disturbance, is the appropriate mitigation (CEQA 15126.4 (b)(3)(C)). In addition to data recovery, under CEQA, the mitigation of effects to an archeological resource that is significant for its scientific value, requires curation of the recovered scientifically significant data in an appropriate curation facility (CEQA 15126.4(b)(3)(C), that is a curation facility compliant with the Guidelines for the Curation of Archaeological Collections. Final studies reporting the interpretation, results, and analysis of data recovered from the archeological site are to be deposited in the California Historical Resources Regional Information Center (CEQA Guidelines 15126.4(b)(3)(C).

In instances where historical architectural resources may be affected, conformance with the SOI Rehabilitation Standards does not determine whether a project would cause a substantial adverse change in the significance of a historic resource under CEQA. Rather, a project that complies with the SOI Rehabilitation Standards benefits from a regulatory presumption that it would have a less-than-significant adverse impact on the environment (Section 15064.5(b)(3)). In evaluating a project's compliance with the SOI Rehabilitation Standards, rehabilitation is the only treatment of the four treatments in the standards (the others being preservation, restoration, and reconstruction) that allows for construction of an addition or other new construction to accommodate a change in use or program.

The first step in analyzing a project's compliance with the SOI Rehabilitation Standards is to identify the resource's character-defining features, including characteristics such as design, materials, detailing, and spatial relationships. Once the property's character-defining features have been identified, it is essential to devise a project approach that protects and maintains these important materials and features, meaning that the work constitutes the "least degree of intervention" and important materials and features are safeguarded throughout the duration of construction. It is critical to ensure that new work does not result in permanent removal, destruction, or radical alteration of any significant character-defining features. Projects that do not comply with the SOI Rehabilitation Standards may or may not cause a substantial adverse change in the significance of an historic resource and would require further analysis by the Planning Department to determine whether the historic resource would be "materially impaired" by the project under State CEQA Guidelines 15064.5(b)(2).

For additional guidance on the rehabilitation of Pier 48, project architectural historians consulted the Port's Guidelines. For the new construction on Seawall Lot 337, project architectural historians consulted the "District or Neighborhood Setting" chapter in the SOI Rehabilitation Standards and SOI Guidelines to assist in evaluating potential visual impacts of the proposed new construction on Pier 48 and the other historical and potential historical resources in the study area. Additionally, the project's potential contribution to cumulative cultural resource impacts is evaluated in the context of the existing, proposed, and reasonably foreseeable future development that are expected in the project vicinity. The cumulative context for each type of resource is unique and described in the cumulative impacts section, below.

LAND USE ASSUMPTIONS

As described in Chapter 2, *Project Description*, this EIR analyzes two land use assumptions: High Commercial and High Residential. These assumptions represent the two distinct site plans that could be implemented. Although the land use mix for Seawall Lot 337 between the High Commercial and High Residential assumptions would differ slightly, the two land use assumptions would have a similar total square footage, similar building configurations (including building footprints), and similar construction characteristics. The proposed construction activities and uses at Pier 48, the seawall, and the bulkhead wharf, which are contributors to the Port of San Francisco Embarcadero Historic District and the only historical resources on the project site, would be the same under both assumptions. Therefore, the differences between the two assumptions would not result in any meaningful difference in potential impacts on cultural resources. As such, the following analysis applies to both the High Commercial and High Residential land use assumptions.

IMPACTS AND MITIGATION MEASURES

Impact CP-1. The proposed project, including rehabilitation and reuse of the existing historic Pier 48 structures, in accordance with applicable Secretary of the Interior's Rehabilitation Standards, as well as new construction on Seawall Lot 337, would not have a substantial adverse effect on a historical or potential historical resource. (Less than Significant)

The project would physically alter Pier 48, which is a contributor to the National Register–listed Port of San Francisco Embarcadero Historic District. The project would also introduce new construction to the Port of San Francisco Embarcadero Historic District, which has the potential to alter the character of the district. As discussed below, four malt storage tanks would be added to the bulkhead wharf north of Shed A at Pier 48, and six spent grain tanks would be installed in the valley between Sheds A and B at Pier 48. Project development on Seawall Lot 337 also has the potential to change the visual characteristics of the historical setting of other known or potential historic resources in the project study area (i.e., Third Street/Lefty O'Doul Bridge, Fourth Street Bridge, the ATSF car ferry slip, Pier 50 Office Building, SFFD Fire Engine Company No. 30 firehouse).

IMPACTS OF PHYSICAL ALTERATIONS ON PIER 48

As described in Chapter 2, *Project Description*, the project sponsor proposes to repurpose the existing Pier 48 sheds and valley to accommodate a range of uses, including industrial/manufacturing, associated general office and storage, retail, restaurant, tour and exhibition space, recreational, and event-related uses. In addition, the project would include public access, with the potential for expanded maritime uses on the aprons and along Channel Wharf.

Improvements to Pier 48 have the potential to result in an adverse effect on the structure's status as a contributor to the National Register–listed Port of San Francisco Embarcadero Historic District; however, the project as proposed would limit improvements, consistent with both the Secretary of the Interior's Standards for the Treatment of Historic Properties and the Port's Guidelines, to those necessary for the use of Pier 48. As described in Chapter 2, *Project Description*, exterior modifications to Pier 48 structures would be limited to refurbishing windows; installing door systems, storefront windows within existing roll-up door openings, and the potential new window openings (in nonhistoric portions [Shed C] of Pier 48); repairing the roof in certain locations where conditions necessitate intervention; and altering the roof to create new roof penetrations and allow for necessary mechanical equipment. No exterior expansion of the Pier 48 shed structures would occur. The project would include installation of a light-weight temporary canopy over a portion of the valley area, minor loading area modifications, and installation of removable grain and yeast silos, up to 50 feet tall, within the valley and to the north of Shed A at the north apron. Entry signage on the building façade would be recessed to preserve the historic integrity of the sheds. Changes to the roof would limit penetrations to accommodate new flues, vents, and potentially the installation of south-facing photovoltaic cells. The valley would be lower than the midpoint of the sloping roof and would not be visible above the Pier 48 roofline.

Interior modifications to Pier 48 could include the construction of a mezzanine in Shed A to provide space for a taproom, restaurant, museum, brewhouses, and related business operational facilities. Other interior shed modifications would include installation of a catwalk structure within Shed A for circulation associated with beer production and public tours of the facility, construction of partition walls to separate retail and brewing facilities from storage and office/support areas, completion of structural repairs, and floor refurbishment. Because the potential exists for hazardous materials to be present, given the age of Pier 48, the project would also test, remove, and dispose of hazardous materials, as required by law. Interior modifications would be designed to maintain sightlines, the historic open volume, and the feel or experience of the enclosed shed space.

Additional seismic upgrades at Pier 48 would include repair/reconstruction of the south and north aprons. Apron sections requiring repair would include the north apron, which is 640 feet long, and the east end of the south apron, which is 370 feet long. The scope of the seismic

upgrade consists of 106 new piles located below a new heavily reinforced concrete apron. The portion of apron to be replaced would be approximately 30 feet wide, 6 feet deep, and 40 feet long and located at both the north and south perimeter of Pier 48, replacing the exterior pier deck in those locations. Along with demolition of the existing perimeter deck, approximately 675 existing 24-inch round creosote-treated wood piles would be extracted with a vibratory extractor to make way for the new piles. The new piles would include both precast concrete and cylindrical steel-encased piles. Approximately 62 precast concrete piles would be installed. Approximately 44 steel-cased, concrete-filled piles would also be installed. A total of 106 new piles would be installed.

Where vessels would be moored, including sections of the east and south aprons, new fenders and cleats may be installed. Parts of the aprons with public access, including the north apron, may require new guard rails, benches, and lighting.

The Port's *Guidelines for Pier and Bulkhead Wharf Substructure Projects* discusses the replacement of wood piles with new materials under the Alteration of Contributing Resources section. The details of the replacement of existing wood piles with new concrete/steel piles at Pier 48 would be reviewed by the Port's Qualified Historic Preservation Expert as part of the permitting process for the project, which would ensure that the project complies with the Port's Guidelines and the SOI Rehabilitation Standards. Despite the replacement of wood piles required for seismic upgrade, the majority of historic materials of Pier 48 would be preserved and rehabilitated according to the Port Guidelines, and the Port of San Francisco Embarcadero Historic District as a whole would continue to convey its significance. The HRE includes a detailed analysis of the proposed project to determine compliance with each of the 10 SOI Rehabilitation Standards. Table 4.D-1, below, summarizes the findings of that analysis, which supports the conclusion that the proposed project would comply with SOI Rehabilitation Standards 1, 2, 3, 4, 5, 9, and 10. In addition, with application of the Port Guidelines, the project would comply with SOI Rehabilitation Standards 6, 7 and 8.

TABLE 4.D-1. PROJECT CONSISTENCY WITH SECRETARY OF THE INTERIOR'S REHABILITATION STANDARDS

SOI Rehabilitation Standard	Discussion
Rehabilitation Standard 1: A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.	The proposed project would comply with Rehabilitation Standard 1. Pier 48 would remain in industrial use, with conversion of the pier sheds to an industrial use, specifically analyzed as a proposed brewery use, and implementation of public access with the potential for expanded maritime uses along the south and east aprons (recreational/boat launch and other Port maritime tenants). Although the project would also add a restaurant, museum, and meeting room, the majority of the facility would be reserved for industrial uses, including brewing, distilling, packaging, storing, shipping, and receiving.
Rehabilitation Standard 2: The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided.	The proposed project would comply with Rehabilitation Standard 2. The exterior of Pier 48 would remain physically unchanged, aside from the insertion of new storefronts into existing cargo door openings on Shed B, which presently contain nonhistoric steel roll-up doors. All of the existing exterior concrete surfaces and wall treatments would remain. The existing steel industrial sash windows in the clerestory and the monitor would be retained and preserved with minor alterations, including select replacement of individual sashes with operable pivot sashes to ventilate the building. These new windows would match the originals in terms of materials, proportions, and muntin patterns. All historic ornamentation and signage, as well as the two flagpoles on the bulkhead buildings, would be retained and preserved. The interiors of the transit sheds would undergo more extensive changes, which would be minimized to retain the sheds' industrial aesthetic, especially the sweeping vista of trusses and columns along the central "nave." Because the transit shed interiors would continue to be used for industrial purposes, relatively few new partitions would be necessary. Partitions would be installed in a manner that would be consistent with the SOI Rehabilitation Standards and would not affect the historic fabric of Pier 48. Therefore, the existing industrial character and open sightlines would be retained throughout the majority of the interior of the building.

SOI Rehabilitation Standard	Discussion
Rehabilitation Standard 3: Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.	The proposed project would comply with Rehabilitation Standard 3. No conjectural features or features from other historic properties would be added to Pier 48. The limited number of new features that would be part of the proposed project, especially the new storefronts that have been proposed for the bulkhead building of Shed B or the canopy enclosure in the valley between Sheds A and B, would all be designed with a compatible contemporary vocabulary that would make evident what is old and what is new.
Rehabilitation Standard 4: Changes to a property that have acquired historic significance in their own right will be retained and preserved.	The proposed project would comply with Rehabilitation Standard 4. The period of significance for the Port of San Francisco Embarcadero Historic District ends in 1946; alterations completed after that date would not contribute to the significance of Pier 48. Shed C and the eastern third of Sheds A and B were destroyed by fire in 1996 and reconstructed between 1999 and 2000. Aside from its massing, which replicates the 1937–1938 addition, none of the 1999 reconstruction has gained significance in its own right because it is not a faithful reproduction of what existed prior to 1996. No other post-1946 alterations, including enlargement of the transit shed doors (1955 and 1958), raising of the lintels on several doors in 1977, or other interior changes made during the 1999–2000 reconstruction, have acquired historical significance in their own right.
Rehabilitation Standard 5: Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.	The proposed project would comply with Rehabilitation Standard 5. All distinctive materials, features, and examples of craftsmanship and construction techniques embodied in the design and construction of Pier 48 would be retained and preserved. The only exceptions would be replacement of several of the existing steel industrial clerestory windows on Sheds A and B with windows that have operable pivot sashes to provide additional ventilation. However, the new windows would match the original in regard to materials, proportions, and detailing.

SOI Rehabilitation Standard	Discussion
Rehabilitation Standard 6: Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.	The project complies with Rehabilitation Standard 6, which allows for a tiered approach to addressing the replacement of historic materials as condition necessitates. Areas of the pier structure that require a substantial amount of repair and replacement include the north and south aprons. Much of the original wood materials in these areas have failed and replacement materials are necessary to meet safety and environmental requirements, to extend the lifespan of the pier structure, and support its new use. The west end of the south apron has been repaired in recent years, but it may be demolished as part of the proposed project and replaced with a new concrete system to tie in with the new east section. The replacement of the original wood pilings with pre-cast concrete and steel-cased concrete-filled piles would increase the lifespan of Pier 48 by improving its structural system. Additional changes to the aprons may include a guardrail along the north apron and new fenders and cleats along the reconstructed south apron. Replacement of the aprons' wood pilings with concrete pilings, as discussed in Chapter 2, *Project Description*, complies with Rehabilitation Standard 6, which allows for replacement of original materials with compatible substitute materials where repair or in-kind replacement is not possible. Despite the loss of some historic fabric, the majority of the character-defining features of Pier 48 would be retained and the property would retain sufficient historic fabric and integrity to contribute to the Port of San Francisco Embarcadero Historic District. Further, as noted above, the details of the replacement of existing wood piles with new concrete/steel piles at Pier 48 would be reviewed by the Port's Qualified Historic Preservation Expert as part of the permitting process for the project, which would ensure that the project complies with the Port's Guidelines and the SOI Rehabilitation Standards.
Rehabilitation Standard 7: Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.	Based on current information, the proposed project would comply with Rehabilitation Standard 7. The project is in the schematic design phase; the precise treatments that would be used on elements of Pier 48 have not been identified. As mentioned previously, the exterior and interior of the bulkhead building and transit shed appear to be in good condition. Nonetheless, cleaning and painting would be needed as

SOI Rehabilitation Standard	Discussion
	part of the proposed project. To remain compliant with Rehabilitation Standard 7, the project sponsor would follow the Port Guidelines and employ the gentlest means of cleaning possible, including pressure washing the exterior, using the lowest effective pressure, and hand washing more heavily soiled areas with a mild detergent, such as trisodium phosphate. Harmful methods of removing dirt and loose paint, such as sand blasting, would not be used.
Rehabilitation Standard 8: Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.	Based on current information and project monitoring measures, the proposed project would comply with Rehabilitation Standard 8. No known archeological sites have been identified in the project area. Impact CP-2, below, discusses the project's low likelihood of disturbing archeological resources. However, to ensure that Rehabilitation Standard 8 is fully complied with, Mitigation Measure M-CP-2 (Archeological Testing) would be employed per standard City of San Francisco construction monitoring protocols.
Rehabilitation Standard 9: New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.	Based on current information, the proposed project would comply with Rehabilitation Standard 9. Four malt storage tanks would be added to the bulkhead wharf north of Shed A, and six spent grain tanks would be installed in the valley between Sheds A and B. Rising up to 50 feet, the tanks would be substantially higher than the transit shed walls and about 20 feet higher than the monitor roof of Sheds A and B. The tanks north of Shed A would be clustered together in a tight arrangement to minimize their visual impact. Although the final design has not yet been determined, the tanks would be located at the northwest end of the pier, along the northern edge, and set back from the more elaborate bulkhead building to prevent obscuring its ornamented exterior. The tanks proposed for the valley south of Shed A would be set back approximately 100 feet from the bulkhead buildings, toward the center of the transit sheds, to minimize their visual effect. These tanks, which would be made of painted steel, are not features of the historic break-bulk piers. However, they are industrial equipment and analogous to the utilitarian cargo booms and other utilitarian machinery that would have been used on the piers during the period of significance. Although the relationship between the bulkhead building and apron would be somewhat altered through the visual intrusion of the tanks, the tanks would be clearly differentiated and recognizable

SOI Rehabilitation Standard	Discussion
	as new features of the adaptive reuse project. The tanks would be easily reversible, with no physical alteration of the bulkhead building and minimal impact on the physical fabric of the pier's structure and apron. In addition to the tanks, a freestanding canopy would be built in the eastern third of the valley between Sheds A and B. It would not be permanently attached to the building and would occupy only the eastern third of the valley, an area that was reconstructed between 1999 and 2000. It would be minimally visible from Terry A Francois Boulevard and other publically accessible areas of the site. Its installation would also be easily reversible. The only other visible exterior alterations to Pier 48 would be a new glazed door and window wall at the entrance to Shed A and the contemporary storefront systems in three of the existing vehicular openings in Shed B. The storefronts would be inserted where the existing roll-up door openings are located. The existing doors are nonhistoric but would remain in place to retain a reminder of the industrial character of the openings. None of the proposed exterior alterations to Pier 48, including the tanks, the fabric canopy, or the three storefronts, would impair the historical integrity of Pier 48 because they would occupy a relatively small area, be freestanding objects, be reversible, and would not detract from the industrial character of the contributing structure or its contributing status within the Port of San Francisco Embarcadero Historic District.
Rehabilitation Standard 10: New additions and adjacent or related new construction will be undertaken so that, if removed in the future, the essential form and integrity of the historic property and its environment will be unimpaired.	The proposed project would comply with Rehabilitation Standard 10, chiefly because it would result in very few permanent, irreversible alterations to Pier 48. The changes that are proposed, including installation of malt and grain tanks, a fabric canopy in the valley, three new storefronts, and new partitions within the interior of Shed B, could all be removed without impairing the integrity of the historic pier. Adjacent new construction on Seawall Lot 337 would be separated from Pier 48 by the Blue Greenway and Terry A. Francois Boulevard, with sidewalks on both sides of the street, over a distance of approximately 66 feet. The buildings closest to Pier 48 would range from 90 to 120 feet high, or about 7 to 11 stories. The new buildings would replace a surface parking lot that does not contribute to the historic setting of Pier 48 or the Port of San Francisco Embarcadero Historic District.

The proposed project would comply with the SOI Rehabilitation Standards and therefore would maintain the character-defining features that qualify Pier 48 as a contributor to the Port of San Francisco Embarcadero Historic District and the district's eligibility for listing on the National Register. The Planning Department's Historic Resource Evaluation Response (HRER) concurred with the HRE determination that the proposed project would not have any impact on Pier 48 or the Port of San Francisco Embarcadero Historic District.[22] Because this aspect of the proposed project would not materially impair the features that qualify the resource as a CEQA historical resource, the physical alterations to Pier 48 and the Port of San Francisco Embarcadero Historic District would have a ***less-than-significant*** impact.

IMPACTS OF PROJECT CONSTRUCTION ON THE PORT OF SAN FRANCISCO EMBARCADERO HISTORIC DISTRICT

The proposed project would include new construction within the Port of San Francisco Embarcadero Historic District, including the addition of several tanks along the perimeter of Pier 48, which is a contributor to the district. New construction outside the boundaries of the historic district, the new buildings at Seawall Lot 337 and Parcel P20, would replace an existing surface parking lot that does not contribute to the context of either Pier 48 or the Port of San Francisco Embarcadero Historic District. Since construction is a temporary condition, occurring over approximately six years, it would not have a permanent impact on the San Francisco Embarcadero Historic District and is not evaluated further.

As stated previously, Seawall Lot 337 and Parcel P20 would be converted from an approximately 14-acre, 2,170-space surface parking lot into 11 blocks containing 11 new mixed-use buildings of between 90 and 240 feet high and new and expanded park and open space areas. The tallest buildings on Seawall Lot 337, which would be approximately 23 stories high (up to 240 feet high, with an additional up to 20 feet [40 feet on Block F] above the roofline to accommodate rooftop mechanical equipment), would be concentrated in the western half of the project site and some distance Pier 48. The buildings closest to Pier 48 would range from 90 to 120 feet high (with an additional up to 20 feet above the roofline to accommodate rooftop mechanical equipment), or about 7 to 11 stories high.

Construction of 90- to 120-foot-high buildings across the street from the historic district would densify the area, in contrast with the undeveloped surroundings that have traditionally characterized this portion of the historic district. Nonetheless, the new buildings that would be introduced by the project would not be unlike those that characterize existing development in the vicinity of the Port of San Francisco Embarcadero Historic District, north of Mission Creek, where the vast majority of San Francisco's historic finger piers are located. Pier 48 would be set back from adjacent development so that it would continue to appear as a freestanding building

[22] San Francisco Planning Department. 2016. *Historic Resource Evaluation Response (HRER), Seawall Lot 337& Pier 48 Mixed-Use Development Project*. March 29.

within the historic district. Exposition Street, a proposed new street that would connect Third Street and Terry A Francois Boulevard, would center on the primary west façade of Pier 48, ensuring that it would remain visible from this portion of Third Street. Additional public open spaces, including the proposed expanded China Basin Park, Channel Wharf to the south, and San Francisco Bay to the north, south, and east, would ensure that Pier 48 is not hemmed in by new construction and that it remains visible from most public vantage points. This would enable Pier 48 to appear largely as it did during the historic district's period of significance and continue to convey its significance as a contributor within the Port of San Francisco Embarcadero Historic District.

As mentioned above, the proposed project would preserve the existing visual continuities between district contributor Pier 48 and the majority of the Port of San Francisco Embarcadero Historic District on the north side of Mission Creek. No new elements would be introduced between Pier 48, which is the sole district contributor south of the creek, and the rest of the historic district. In addition, the expansion of China Basin Park would preserve a substantial view corridor from the north and west. The new buildings that would be built on Seawall Lot 337 would be designed in a contemporary, mode that would be appropriate to their period of construction. No attempt would be made to incorporate historic elements from Pier 48 or any other nearby historic buildings or structures so that they would appear to have a different historical context. Nonetheless, the materials used on the new buildings, including concrete, metal, and wood, would be compatible with the industrial materials and design aesthetic of Pier 48. As discussed above, the proposed new development would be sufficiently set back from contributing buildings within the Port of San Francisco Embarcadero Historic District. Although materials have not yet been selected, the designers would follow the SOI's Rehabilitation Standards and Port Guidelines to select contemporary materials that would be visually compatible with the intent and character of historic materials such that the project would not impair the character of the district or its eligibility as a CEQA historical resource. Therefore, the proposed project would have a ***less-than-significant*** impact on a historical or potential historical resources.

IMPACTS OF PROJECT CONSTRUCTION ON OFFSITE HISTORIC RESOURCES IN THE STUDY AREA

The proposed new mixed-use development on Seawall Lot 337 would be separated from the rest of the study area by the streets that currently bound the project site. One nearby known historic resource, Third Street/Lefty O'Doul Bridge, and one nearby potential historic resource, the Pier 50 Office Building, are located across the street diagonally from the project site. The proposed buildings on Seawall Lot 337 would clearly be visible from both properties but would not negatively affect the visual characteristics of either property, as explained below. The northern end of the Third Street/Lefty O'Doul Bridge is already bounded to the north by an intensively developed urban context consisting of AT&T Park and the adjoining Mission Bay high-rise and mid-rise residential buildings. The width of Mission Creek provides generous

buffers to the east and west, and the proposed expansion of China Basin Park would provide an additional open space buffer to the south. The expansion of China Basin Park would preserve a substantial view corridor from the north and west, including from Third Street/Lefty O'Doul Bridge and AT&T Park.

The proposed construction on Seawall Lot 337 would be separated from the Pier 50 Office Building by the full width of Terry A. Francois Boulevard, a distance of approximately 66 feet. The contemporary design of the proposed new buildings on Seawall Lot 337 would be compatible with the Modernist aesthetic of the Pier 50 Office Building.

The new Public Safety Building complex is contemporary in character and rises several stories above the two-story firehouse. The historic setting of the former fire station does not appear to retain integrity because the neighborhood context consists of densely built, mid-rise contemporary buildings. The proposed construction on Seawall Lot 337 would be separated from the potential historic resource by Mission Rock Street and intervening new construction. The proposed project would not have the potential to impair the potential historic resource because of the distance from the proposed new construction and the lack of historic setting for the potential historic resource.

The remaining two potential historic resources in the study area (the ATSF car ferry slip and the Fourth Street/ Peter Maloney Bridge) are located a considerable distance from the project site; the historic setting of these resources would not be visually affected by the proposed project, with its similar scale and aesthetic compared to other contemporary construction in the area.

Based on the analysis above, the proposed project on Seawall Lot 337 would not materially impair any qualities that qualify the five known or potential CEQA historical resources within the study area, and thus, the impact of new construction nearby would be ***less than significant***.

Impact CP-2. The proposed project could cause a substantial adverse change in the significance of an archeological resource. (Less than Significant with Mitigation)

As described above, there are no known archeological sites in the project area. Based on the results of nearby archeological investigations and archival research, discoveries of significant historic-period archeological resources are not anticipated. The geoarcheological assessment conducted for the project found that the project site is underlain by tidal flats, which were filled toward the beginning of the twentieth century.[23] Below the tidal flat deposits, the upper interface of sands and silts, inferred to be from multiple depositional origins, are present to depths ranging from 50 to 85feet below mean sea level. These deposits are thought to be from the Colma formation and underlain by Old Bay Mud. The upper three to five feet of the Colma Formation are generally considered sensitive for prehistoric archeological resources. While tidal

[23] ICF International. 2016. *Geoarcheological Assessment for the Seawall Lot 337/Pier 48 Mixed-Use Project*. May 2.

flat deposits are generally considered to have limited archeological sensitivity, this sensitivity assessment is increased after the discovery at the Transbay Transit Center in 2014 of a 7500-year-old human skeleton 50 feet below the ground surface encased in estuarine clay. The interface between the tidal flat deposits and the underlying Colma formation retain sensitivity for deeply buried prehistoric archeological resources from the middle Holocene or earlier (i.e., greater than 7800 years old). Because archeological deposits from this period are uncommon, they have very high information value. Therefore, the project site is determined to be sensitive for deeply buried prehistoric resources.

Project construction would involve the installation of piles to support project structures. Piles could be installed at depths where an archeologically sensitive interface exists, resulting in the possibility for project construction activities to encounter and adversely affect unknown archeological resources. This impact is therefore considered ***significant***.

MITIGATION MEASURE. Project construction may result in the destruction of unknown archeological resources. However, with implementation of Mitigation Measure M-CP-2, Implementation of Archeological Testing Program, this impact would be reduced to a ***less-than-significant*** level.

M-CP-2: Archeological Testing

Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL) maintained by the Planning Department archeologist. The project sponsor shall contact the Planning Department archeologist to obtain the names and contact information for the next three archeological consultants on the QACL. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (ERO). All plans and reports prepared by the consultant, as specified herein, shall be submitted first and directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of 4 weeks. At the direction of the ERO, the suspension of construction can be extended beyond 4 weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level of potential effects on a significant archeological resource, as defined in CEQA Guidelines, Sections 15064.5 (a) and (c).

Consultation with Descendant Communities: On discovery of an archeological site[24] associated with descendant Native Americans, the overseas Chinese, or other potentially interested descendant group, an appropriate representative[25] of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and offer recommendations to the ERO regarding appropriate archeological treatment of the site, recovered data from the site, and, if applicable, interpretative treatment of the associated archeological site. A copy of the final archeological resources report shall be provided to the representative of the descendant group.

Archeological Testing Program. The archeological consultant shall prepare and submit to the ERO for review and approval an archeological testing plan (ATP). The archeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archeological resource(s) that could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program will be to determine, to the extent possible, the presence or absence of archeological resources and identify and evaluate whether any archeological resource encountered on the site constitutes a historical resource under CEQA.

At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. If, based on the archeological testing program, the archeological consultant finds that significant archeological resources may be present, the ERO, in consultation with the archeological consultant, shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. No archeological data recovery shall be undertaken without the prior approval of the ERO or the Planning Department archeologist. If the ERO determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor:

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[24] The term "archeological site" is intended here to include any archeological deposit, feature, burial, or evidence of burial.

[25] An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American contact list for the City and County of San Francisco maintained by the NAHC or, in the case of overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the department archeologist.

A. The proposed project shall be redesigned so as to avoid any adverse effect on the significant archeological resource, or

B. A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.

Archeological Monitoring Program. If the ERO, in consultation with the archeological consultant, determines that an archeological monitoring program shall be implemented, the archeological monitoring program shall include the following provisions:

- The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the archeological monitoring program reasonably prior to any project-related soil-disturbing activities commencing. The ERO, in consultation with the archeological consultant, shall determine what project activities shall be archeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utility installation, foundation work, pile driving (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the risk these activities pose to potential archeological resources and their depositional context;
- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), know how to identify evidence of the expected resource(s), and know the appropriate protocol in the event of apparent discovery of an archeological resource;
- The archeological monitor(s) shall be present on the project site according to the schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with project archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;
- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;
- If an intact archeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile-driving/construction activities and equipment until the deposit is evaluated. If, in the case of pile-driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile-driving activity may affect an archeological resource, the pile-driving activity shall be terminated

until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit and present the findings of this assessment to the ERO.

Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO.

Archeological Data Recovery Program. The archeological data recovery program shall be conducted in accordance with an archeological data recovery plan (ADRP). The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to any portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.
- *Cataloging and Laboratory Analysis*. Description of selected cataloging system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an onsite/offsite public interpretive program during the course of the archeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archeological resource from vandalism, looting, and nonintentionally damaging activities.

- *Final Report*. Description of proposed report format and distribution of results.
- *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Final Archeological Resources Report. The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/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.

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, the ERO shall receive a copy of the transmittal of the FARR to the NWIC, and the Environmental Planning division of the Planning Department shall receive one bound, one unbound, 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 in or high interpretive value of the resource, the ERO may require a final report content, format, and distribution different from that presented above.

Impact CP-3. The proposed project could disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

Because of the location of the project site on previously submerged lands, the potential for encountering human remains is low. However, it is possible that human remains, particularly those outside a designated cemetery, may be encountered during construction activities. This impact would be ***significant***.

MITIGATION MEASURE. Project construction would not result in the destruction of human remains if encountered during ground-disturbing activities with the incorporation of Mitigation Measure M-CP-3, Treatment of Human Remains or Unassociated Funerary Objects. This mitigation measure calls for project construction crews to stop work and contact the coroner in case of accidental discovery of buried human remains. With implementation of Mitigation Measure M-CP-3, this impact would be ***less than significant***.

M-CP-3: Treatment of Human Remains or Unassociated Funerary Objects

The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws. This shall include immediate notification of the coroner of the City and County of San Francisco and, in the event of the coroner's determination that the human remains are Native American remains, notification of the Native American Heritage Commission (NAHC), which shall appoint a Most Likely Descendant (MLD) (PRC Section 5097.98). The archeological consultant, project sponsor, ERO, and MLD shall have up to but not beyond 6 days after the discovery to make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines. Section 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects, as specified in the treatment agreement, if such an agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.

Impact CP-4. The proposed project could result in a substantial adverse change in the significance of a tribal cultural resource. (Less than Significant with Mitigation)

CEQA Section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As discussed above, the noticing and tribal consultation requirements of AB 52 do not apply to the proposed project as the Notice of Preparation was filed with the State Clearinghouse prior to the enactment of AB 52. While Native American outreach was completed for this project, as summarized above, noticing and tribal consultation as outlined under AB 52 was not undertaken.

Based on the background research and Native American outreach, there are no known tribal cultural resources on the project site. However, based on the archeological sensitivity assessment, there is the potential for prehistoric archeological resources to be present on the project site. Prehistoric archeological resources may also be considered tribal cultural resources. In the event that project activities disturb unknown archeological sites that are considered tribal cultural resources, any inadvertent damage would be considered a ***significant*** impact.

MITIGATION MEASURE. With implementation of Mitigation Measure M-CP-4, Tribal Cultural Resources Interpretive Program, which would require the project be redesigned to avoid adverse effects on significant tribal cultural resource, if feasible, or if preservation in place is not feasible, would require implementation of an interpretative program of the tribal cultural resource in consultation with affiliated tribal representatives, the proposed project would have a ***less-than-significant*** impact on tribal cultural resources.

M-CP-4: Tribal Cultural Resources Interpretive Program

If the 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 (TCR) 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 Environmental Review Officer (ERO) determines that preservation-in-place of the tribal cultural resource (TCR) pursuant to Mitigation Measure M-CP-2, Archeological Testing, 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 Environmental Review Officer (ERO), if 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 TCR 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.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative impacts associated with cultural resources considers the projects listed in Table 4-1 of Chapter 4, *Environmental Setting and Impacts,* as well as past and present projects throughout the city.

Impact C-CP-1. The proposed project, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on historic resources. However, the proposed project's contribution would not be cumulatively considerable. (Less than Significant)

The Mission Bay neighborhood is the location of several proposed, underway, and recently completed projects. Several of these projects are located within the study area and are described above, including the recently completed SFPD Public Safety Building, which stands opposite Seawall Lot 337 on the south side of Mission Rock Street. Nearly all of these buildings were constructed or are planned on vacant lots that were once part of the vast Southern Pacific and ATSF rail yards south of Mission Creek. No historic buildings were demolished to accommodate development in Mission Bay.[26] Indeed, one of these projects, the new Public Safety Building, incorporated a vacant historic firehouse into the project, rehabilitating the building as a community meeting space.

Several substantial projects are being planned or have been completed within recent years within the boundaries of the Port of San Francisco Embarcadero Historic District. The most substantial of these projects include rehabilitation of the transit shed at Pier 40, a contributor to the historic district; demolition of Pier 36, a contributor to the historic district; construction of the Brannan Street Wharf project, a 57,000-square-foot public park parallel to the Embarcadero Promenade; rehabilitation of the Pier 24 Annex Building, a contributor to the historic district; substructure repair of the Pier 22½ Fireboat Station, a contributor to the historic district located south of the Ferry Building on The Embarcadero; construction of a new ferry terminal berth south of the Ferry Building where Sinbad's, a nonhistoric building outside the historic district, is located; relocation of the Exploratorium from the Palace of Fine Arts to Piers 15 to 17, both contributors to the historic district; rehabilitation of historic district contributors Piers 19 to 23 for mixed uses; and alterations to historic district contributors Piers 31 to 33 to support existing ferry service to Alcatraz Island. In order to meet Port Guidelines, all of these projects must comply with SOI Rehabilitation Standards and, therefore, would not result in significant adverse effects on the environment under CEQA. In conclusion, in combination with other projects, the proposed project, which complies with the majority of the SOI Rehabilitation

[26] EIP Associates. 1998. *Mission Bay Subsequent EIR*. September 17. A copy of this document is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 96.771E.

Standards and would not alter the status of Pier 48 as a contributor to the Port of San Francisco Embarcadero Historic District, would ***not constitute a cumulatively considerable contribution*** to a significant adverse effect on the historic district and therefore would have a less-than-significant cumulative impact.

Impact C-CP-2. The proposed project, in combination with past, present, and reasonably foreseeable projects in the city, could result in a significant cumulative impact on archeological resources, tribal cultural resources, and human remains. However, the project's contribution would be less than cumulatively considerable. (Less than Significant with Mitigation)

CEQA requires that development projects identify the potential for archeological resource impacts and mitigate those impacts (CEQA Section 21083.2 and State CEQA Guidelines Section 15064.5). Despite the fact that past development in the city has damaged or destroyed archeological resources, no archeological resources have been documented within or directly adjacent to the project area. Nevertheless, undocumented resources could be discovered during the development of identified cumulative projects, resulting in a significant cumulative impact. Although the project area contains a stratigraphic interface with moderate archeological sensitivity at great depth, implementation of Mitigation Measure M-CP-2 would result in less-than-significant impacts on any as-yet undiscovered archeological resources. Although the possibility of finding humans or tribal cultural resources is low at the project site; the project, combined with other nearby cumulative development, could result in a significant cumulative impact. Implementation of Mitigation Measures M-CP-3 (Treatment of Human Remains or Unassociated Funerary Objects) and M-CP-4 (Tribal Cultural Resources Interpretative Program) ensure that project-level impacts remain less than significant. Therefore, the project's incremental contribution to city-wide cumulative effects on archeological resources, human remains, or tribal cultural resources would ***not be cumulatively considerable*** because it would not contribute to a loss of valuable resources; thus, the project's cumulative impact would be less than significant with mitigation.

4.E TRANSPORTATION AND CIRCULATION

Section 4.E addresses the impacts that transportation and land use changes related to the Seawall Lot 337 and Pier 48 Mixed-Use Project (Mission Rock Project or proposed project) would have on traffic, transit, bicycle and pedestrian travel and circulation, loading, and emergency access. The section describes existing transportation conditions on the project site and in the transportation study area, and presents the baseline transportation conditions against which project impacts are measured. Project-specific impacts are presented for both the High Residential Assumption and the High Commercial Assumption, and mitigation measures are identified when feasible. A cumulative impact discussion is identified for each transportation mode. This section also presents information on the proposed project's parking demand in relation to the proposed parking supply.

Issues identified in response to the notice of preparation (NOP) (Appendix 1) were considered in preparing this analysis. The City and County of San Francisco (City) received 24 NOP comments related to transportation and circulation. The NOP comments expressed concerns regarding increases in traffic and traffic congestion, connections to the city's transportation network, lack of public transportation in the area, pedestrian safety, traffic during game days, and fair-share contributions. Three of the NOP comments also expressed concern that increased traffic induced by the proposed project could delay emergency vehicles while traveling from the Public Safety Building and Police Headquarters at Third and Mission Rock Streets, immediately south of the project site.

This section summarizes the information provided in the Mission Rock (Seawall Lot 337/Pier 48) Transportation Impact Study (TIS) (Fehr & Peers, April 2017**)**. A copy of this report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2013.0208!. The analysis uses methods consistent with the 2002 San Francisco Transportation Impact Analysis Guidelines for Environmental Review (SF Guidelines) and San Francisco Planning Commission Resolution No. 19579, adopted on March 3, 2016. Planning Commission Resolution No. 19579 removes automobile delay as described solely by level of service (LOS) or similar measure of vehicular capacity or traffic congestion as a factor in determining significant transportation impacts on the environment, pursuant to the California Environmental Quality Act (CEQA). The resolution replaces automobile delay with vehicle miles traveled (VMT) criteria, which are designed to promote the reduction of greenhouse gas (GHG) emissions, the development of multimodal transportation networks, and a diversity of land uses, consistent with proposed and forthcoming changes to the CEQA Guidelines by the Office of Planning and Research, as mandated by Senate Bill 743.

Prior to adoption of Resolution No. 19579 on March 3, 2016, some projects, including the proposed project, were in the process of environmental review and had substantively completed transportation impact studies using the methodology and automobile delay (i.e., LOS) CEQA

significance criteria formerly used by the SF Guidelines. Accordingly, the TIS included as Appendix 4-1 to this Draft Environmental Impact Report (Draft EIR) has been updated to reflect the shift by the City and County of San Francisco (City) to VMT and the removal of automobile delay as a significance criterion. However, Section 7 of the TIS includes a discussion of LOS conditions for informational purposes under project and cumulative conditions.

As stated in Attachments E and F to the Planning Department's Executive Summary for the March 3, 2016, Planning Commission hearing regarding Resolution No. 19579,[1] for projects that require localized circulation impact analysis (e.g., analysis of potential impacts related to transit delay, bicycle and pedestrian safety, emergency vehicle access, and loading), the Planning Department continues to use the localized trip generation rates and trip distribution identified in the SF Guidelines.

The assessment of transportation impacts in this section includes a description of existing conditions as well as an evaluation of project impacts for both a baseline and a cumulative scenario. The NOP for the proposed project was released in 2013. Following the release of the NOP, the proposed building heights for the proposed project were reduced in response to neighborhood concerns. These adjusted heights were approved by the voters with the passage of Proposition D in 2015. At that time, it was determined that the existing conditions as of the NOP should be updated to account for new development and infrastructure projects that had been approved since the NOP was released and would be in place at the start of the project. The existing conditions plus these updates is referred to as the baseline conditions for purposes of the transportation analysis.

Data used in the transportation analysis was collected between 2013 and 2016. The quantitative analysis of pedestrian and parking conditions in the environmental setting section is based on data collected in the fall of 2013 upon release of the project NOP. The qualitative description of existing roadway, bicycle, and loading zone facilities in the setting section is based on conditions as of December 2016. The 2015 Baseline scenario includes development and infrastructure projects that were either under construction or approved and funded for construction at the end of July 2015 and will be completed prior to or during construction of the proposed project. In addition to those projects included in the baseline scenario, approved projects that were considered to be less certain in terms of their timing are analyzed as part of the cumulative scenario. The cumulative scenario includes reasonably foreseeable transportation network improvements and forecast growth in jobs and employment in San Francisco by 2040.

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[1] San Francisco Planning Department. 2016. *Executive Summary: Resolution Modifying Transportation Impact Analysis.* Hearing date: March 3, 2016. Attachment E: Screening Criteria for Circulation Analysis and Methodology for Travel Demand, and Attachment F: Methodologies, Significance Criteria, Thresholds of Significance, and Screening Criteria for Vehicle Miles Traveled and Induced Automobile Travel Impacts (including an appendix from the San Francisco County Transportation Authority).

ENVIRONMENTAL SETTING

TRANSPORTATION STUDY AREA

The approximately 28-acre project site is bounded by the San Francisco Bay (Bay), Terry A. Francois Boulevard, Third Street, and Mission Rock Street, and Pier 50. The Mission Rock project site is located in the Mission Bay neighborhood, an approximately 303-acre neighborhood of biotechnology research and development uses, hospitals, event facilities, offices, and mixed-use housing uses. The South of Market (SOMA) neighborhood, located to the north and west of the Mission Bay neighborhood, is home to museums, the Moscone Convention Center, retail centers, housing, and office uses. The transportation study area (study area) for the proposed project consists of the area bound by The Embarcadero, Howard Street, Seventh Street, Cesar Chavez Street, Illinois Street, and Terry A. Francois Boulevard. AT&T Park, home of the San Francisco Giants professional baseball team, is located just over 0.1 mile to the north of the project site. The Golden State Warriors, a professional basketball team, currently based in Oakland, is constructing an event center and mixed-use development project approximately ⅓ mile south of the Mission Rock Project site on Mission Bay South, Blocks 29–32. That project broke ground in January 2017. The Golden State Warriors project includes a multi-purpose event center that will accommodate up to 18,500 patrons, 605,000 gross square feet (gsf) of office space, 125,000 gsf of retail space, and 950 parking spaces on an approximately 11-acre site. Figure 4.E-1, on the next page, shows the location of the project site and the study area.

The study area is defined by travel corridors and by facilities such as transit routes and stations, bicycle routes and amenities, pedestrian sidewalks and crossings, and the overall vehicular roadway network that residents and visitors would use in traveling to and from the project site. This includes bicycle and pedestrian safety conditions, loading, transit delay, and emergency vehicles access.

A total of 36 existing intersections within the study area were identified as key locations likely to be affected by the proposed project, and were selected for detailed study, particularly for pedestrian conditions. These study intersections include major intersections along Third Street, Fourth Street, Terry A. Francois Boulevard, 16th Street, and Mariposa Street, as well as numerous local intersections along access routes to and from U.S. Highway 101 (US 101) and Interstate (I) 280 within the study area. Currently, the intersection of 16th Street/Terry A. Francois Boulevard does not exist.

Intersections farther away were not analyzed as part of the study because project-generated travel remaining on local streets would be dispersed to lower levels; consequently, the proposed project's effects would be small in comparison to the volumes existing on those streets. The study intersections are identified by number in Figure 4.E-1; the intersections corresponding to numbers in Figure 4.E-1 are listed in Table 4.E-1, on page 4.E-5.



Source: Fehr & Peers, 2016.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.E-1
Study Intersections

TABLE 4.E-1. STUDY INTERSECTIONS

Intersection	Traffic Control
1. Embarcadero/Bryant Street	Signal
2. Embarcadero/Brannan Street	Signal
3. Embarcadero/Townsend Street	Signal
4. King Street/Second Street	Signal
5. King Street/Third Street	Signal
6. King Street/Fourth Street	Signal
7. King Street/Fifth Street/I-280 Ramps	Signal
8. Beale Street/Bryant Street	Signal
9. Fremont Street/Harrison Street/I-80 Westbound Off-Ramp	Signal
10. Fremont Street/Folsom Street/I-80 Westbound Off-Ramp	Signal
11. Second Street/Brannan Street	Signal
12. Second Street/Bryant Street	Signal
13. Third Street/Bryant Street	Signal
14. Third Street/Harrison Street	Signal
15. Third Street/Howard Street	Signal
16. Fourth Street/Bryant Street/I-80 Eastbound Off-Ramp	Signal
17. Fourth Street/Harrison Street/I-80 Westbound On-Ramp	Signal
18. Fourth Street/Howard Street	Signal
19. Fifth Street/Bryant Street/I-80 Eastbound On-Ramp	Signal
20. Fifth Street/Harrison Street/I-80 Westbound Off-Ramp	Signal
21. Third Street/Terry A. Francois Boulevard	Signal
22. Third Street/Channel Street	Signal
23. Third Street/Mission Rock Street	Signal
24. Fourth Street/Channel Street	Signal
25. Terry A. Francois Boulevard/Mission Rock Street	All Way Stop Control
26. 16th Street/Terry A. Francois Boulevard (future)	—
27. 16th Street/Third Street	Signal
28. 16th Street/Owens Street	Signal
29. 16th Street/Seventh Street/Mississippi Street	Signal
30. Seventh Street/Mission Bay Drive	Signal
31. Mariposa Street/Terry A. Francois Boulevard Illinois Street	All Way Stop Control
32. Mariposa Street/Third Street	Signal
33. Mariposa Street/I-280 Northbound Off-Ramp	Signal
34. Mariposa Street/I-280 Southbound On-Ramp	Signal
35. Third Street/22nd Street	Signal
36. Third Street/Cesar Chavez Street	Signal

Source: Fehr & Peers, 2015

EXISTING CONDITIONS

ROADWAY FACILITIES

The study area is served by three freeways providing regional access and multiple local streets providing access to the project site. A section describing local roadways is followed by a description of the freeways serving the study area.

LOCAL ROADWAYS

Local access to the project site and the study area is provided by an urban street grid network. Third Street is the main north-south street in the study area and is one of the major arterials in this part of eastern San Francisco. Mariposa Street and 16th Street are the main east-west streets in the study area. Access to the project site is from Mission Rock Street and Channel Street, as well as from two new east-west streets (i.e., Exposition Street and Long Bridge Street) at their intersections with Third Street. Access to the project is also from the south via Terry A. Francois Boulevard. Most of the local roadways in the study area are described in Table 4.E-2, on the next page. The table identifies the street name; direction (east–west or north–south); number of lanes; the streets' designations in the San Francisco General Plan, if any; transit routes that use a street; and any bicycle facilities provided on each of the key streets in the study area.

REGIONAL ROADWAYS

I-80 provides the primary regional access to the project site from the East Bay. I-80 runs through the northern portion of the study area and connects San Francisco to the East Bay and other points east via the San Francisco–Oakland Bay Bridge. I-80 eastbound can be accessed via the on-ramp at Fifth Street/Bryant Street, and the project site can be accessed from westbound I-80 at the off-ramp at Fifth Street/Harrison Street. Within the study area, I-80 has six lanes (three in each direction).

I-280 provides regional access to the study area from the South Bay and Peninsula. I-280 and US 101 have an interchange to the south of the study area, and I-280 terminates in the study area at the King Street/Fifth Street intersection. I-280 is generally a six-lane freeway. The project site can be accessed from either the Mariposa Street or the Cesar Chavez Street off-ramps in the northbound direction or the 18th Street or Pennsylvania/25th Street off-ramps in the southbound direction. The nearest on-ramps are from 25th Street or 18th Street in the northbound direction and Mariposa Street and Pennsylvania/25th Street in the southbound direction.

TABLE 4.E-2. LOCAL ROADWAY NETWORK

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities/Routes (typical)[1,2]
Second Street	N-S	4	Secondary Transit Preferential Street	10, 12	Class III
Third Street	N-S	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Citywide Pedestrian Network Street Neighborhood Commercial Pedestrian Street Near-Term Bicycle Improvement Projects and Minor Improvements to Bicycle Route Network	8X, 8AX, 8BX, 9, 30, 45, 55, 81X, T	Class III[3]
Fourth Street	N-S	2/4[4]	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Citywide Pedestrian Network Street Neighborhood Commercial Pedestrian Street and Minor Improvements to Bicycle Route Network	47	Class II
Fifth Street	N-S	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Near-Term Bicycle Improvement Projects	8X, 8AX, 8BX, 27, 30, 45, 47	Class III, Route 19
Sixth Street	N-S	4-6[5]	Congestion Management Network Major Arterial Metropolitan Transportation System Street Neighborhood Commercial Pedestrian Street	14X, 27	-
Seventh Street	N-S	2-4[6]	Congestion Management Network Major Arterial Metropolitan Transportation System Street	19	Class II, Route 23
16th Street	E-W	4	Primary Transit Oriented Preferential Street Neighborhood Commercial Pedestrian Street Near-Term Bicycle Improvement Projects	22, 33, 55	Class II, Route 40

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities/Routes (typical)[1,2]
22nd Street	E-W	2	—	—	—
Beale Street	N-S	2	—	7, 7R, 10, 38, 38R, 70, 81X, 82X	Class II
Brannan Street	E-W	2/4[7]	—	82X, 83X	—
Bryant Street	E-W	2-5[8]	Primary Transit Important/Secondary Transit Preferential Street Neighborhood Commercial Pedestrian Street	8, 8AX, 8BX, 27, 47	—
Cesar Chavez Street	E-W	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Near-Term Bicycle Improvement Projects	-	Class II, Route 60
Channel Street	E-W	2/4[9]	—	—	—
The Embarcadero	N-S	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Citywide Pedestrian Network Street Neighborhood Commercial Pedestrian Street	F, N, T	Class I/Class II
Folsom Street	E-W	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street	12, GGT	Class II
Fremont Street	N-S	4	Congestion Management Network Major Arterial Primary Transit Important Preferential Street	76, GGT	—
Harrison Street	E-W	4-5	Congestion Management Network Major Arterial Primary Transit Important/Secondary Transit Preferential Street Neighborhood Commercial Pedestrian Street	12, 27, 47	—
Howard Street	E-W	4-5	Congestion Management Network Major Arterial Metropolitan Transportation System Street	76, GGT	Class II/Class III

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities/Routes (typical)[1,2]
Illinois Street	N-S	2	-	48	Class II, Route 5
King Street	E-W	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Neighborhood Pedestrian Network Connection Street	N, T	Class II/Class III, Route 5
Mariposa Street	E-W	2/4[10]	—	—	Class III, Route 7/23
Mission Bay Drive	E-W	5	—	—	—
Mission Rock Street	E-W	2	—	—	—
Mississippi Street	N-S	2	—	—	Class II [11]
Owens Street	N-S	4	—	—	—
Terry A. Francois Boulevard	N-S	4	—	—	Class II, Route 5
Townsend Street	E-W	2-4	—	10, 83X	Class II

Source: Fehr & Peers, 2015; San Francisco General Plan

[1] The descriptions associated with each street (General Plan Designation, Transit Routes, etc.) are those that apply to some portion of that street, although not necessarily to the entire length of that street.

[2] Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists. 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 bike routes that allow bicycles to share the travel lane with vehicles.

[3] Except between China Basin Street and Cesar Chavez Street where there are no bicycle facilities.

[4] Two lanes from 16th Street to Channel Street; four lanes north of Channel Street, except six lanes from King Street to Townsend Street.

[5] Four lanes from Market Street to Howard Street; five lanes (three northbound, two southbound) from Howard Street to Folsom Street during a.m./p.m. peak periods only (four lanes during other times); six lanes during a.m./p.m. peak periods only from Folsom Street to Brannan Street (four lanes during other times).

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities/Routes (typical)[1,2]

[6] Two lanes from 16th Street to King Street; three lanes from King Street to Brannan Street; four lanes north of Brannan Street.

[7] Two lanes from The Embarcadero to Colin P. Kelly Jr. Street; four lanes southwest of Colin P. Kelly Jr. Street.

[8] Five lanes from Seventh Street to Second Street; three lanes from Second Street to Interstate 80 (I-80) ramp; two lanes from I-80 ramp to Beale Street; three lanes from Beale Street to The Embarcadero.

[9] Four lanes from Third Street to Fourth Street; two lanes elsewhere.

[10] Four lanes from Terry A. Francois Boulevard to Pennsylvania Avenue; two lanes elsewhere.

[11] Class II bicycle facility from 16th Street to Mariposa Street; no bicycle facilities elsewhere.

US 101 provides access to the north and south of the study area. US 101 is west of the study area and provides access to the Peninsula and South Bay. US 101 connects with I-80 and the San Francisco–Oakland Bay Bridge to the northwest of the project site. US 101 also connects San Francisco and the North Bay via the Golden Gate Bridge via surface streets on Van Ness Avenue or Franklin Street and Lombard Street. Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the San Francisco General Plan.

SPECIAL EVENTS

Currently, the Seawall Lot 337 and Pier 48 site hosts approximately 50 special events per year (e.g., festivals, performances). Attendance levels can vary. Approximately 200,000 to 250,000 guests visit the site annually for events. The largest event is Cirque du Soleil, which attracts up to 2,500 patrons per show. Shows are held on weekday evenings, with matinees and evening performances on weekends. The shows occur during baseball's off-season, between November and January. Parking for event patrons is available in the portion of Lot A that is not required for the Cirque du Soleil tent. There is ample parking in other garages and parking lots in the area for such events. For all events at the Seawall Lot 337 and Pier 48 site, the event sponsor must obtain any applicable permits from the Port of San Francisco (Port) or the City. As part of the permitting process, the event sponsor must include a plan for managing travel with minimal effect on the surrounding neighborhoods. These management strategies may include the promotion of transit services and parking management.

VEHICLE MILES TRAVELED IN SAN FRANCISCO AND BAY AREA

Many factors affect vehicle travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management.[2] Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given the travel behavior factors described above, some geographic areas of the region exhibit lower VMT than other geographic areas of the region. VMT measures the amount and distance that a project might cause people to drive, accounting for the number of passengers within a vehicle. Transportation professionals have developed transportation analysis zones (TAZs) to analyze transportation patterns in San Francisco in discrete geographic areas. TAZs are used in

[2] University of California, Davis Institute of Transportation Studies. 2013. *California Smart-Growth Trip Generation Rates Study.* Appendix A. March.

transportation planning models for transportation analysis 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. All VMT data presented in this section are derived from the San Francisco Chained Activity Model Process (SF-CHAMP) travel demand model.

In expressing VMT, the Planning Department uses a ratio, which compares how many vehicle miles residents or employees or visitors to businesses travel on a daily basis. Information on VMT per capita or per employee is referred to as a VMT ratio.

The project site comprises most of the area in TAZ 655, shown in Figure 4.E-2, on the next page, and described as the area between Mission Creek/China Basin, the Bay, Mission Rock Street, and Third Street. The location of the project site is close to major transit services and facilities, bicycle and pedestrian networks and facilities, and a diversity of land uses. A project located in TAZ 655 would have a substantially reduced number of vehicle trips with shorter distances and, thus, reduced VMT compared to other areas in the region. This is demonstrated by comparing data regarding average VMT for residential, office, and retail uses in the region and the specific project site TAZ (TAZ 655). The VMT rates that follow are identified for each by category of use.

Regional VMT: For residential development, the regional average daily VMT per capita[3] in the entire nine-county Bay Area is 17.2.[4] For office and active/retail development, the regional average daily work-related VMT numbers per employee are 19.1 and 14.9, respectively. Regionally, the lowest VMT ratios (in terms of per capita and per employee) are within San Francisco. San Francisco neighborhoods typically exhibit the lowest 20 percent of VMT per capita in the region. Conversely, neighborhoods within cities such as Novato and Orinda exhibit the highest 20 percent of VMT per capita in the region.

TAZ 655 VMT: The average VMT estimates for each use category in TAZ 655 are projected to be significantly lower than the regional standard. For residential development, the TAZ 655 average daily VMT per capita is 3.5.[5] For office and active/retail/production development, the TAZ 655 average daily VMT numbers per employee are 12.1 and 10.4, respectively.

Table 4.E-3, on page 4.E-14, provides a summary of VMT for the region, city, and TAZ 655 (the TAZ in which the project site is located). The project site is within the lowest 20 percent of VMT per capita in the region and the second lowest 20 percent of VMT per employee and per retail employee in the region.

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[3] All VMT data from SF-CHAMP model, as provided by the San Francisco County Transportation Authority (SFCTA).

[4] Includes the VMT generated by all households in the region.

[5] Includes the VMT generated by all households in TAZ 655, which encompasses the Mission Rock development.



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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 4.E-2
Traffic Analysis Zone Boundaries

TABLE 4.E-3. EXISTING DAILY VEHICLE MILES TRAVELED

Land Use	Bay Area VMT: Regional Average	TAZ 655 VMT	TAZ 655: Percent Below Regional Average
Households (Residential)	17.2	3.5	-80%
Employment (Office)	19.1	12.1	-37%
Visitors (Retail)	14.9	10.4	-30%

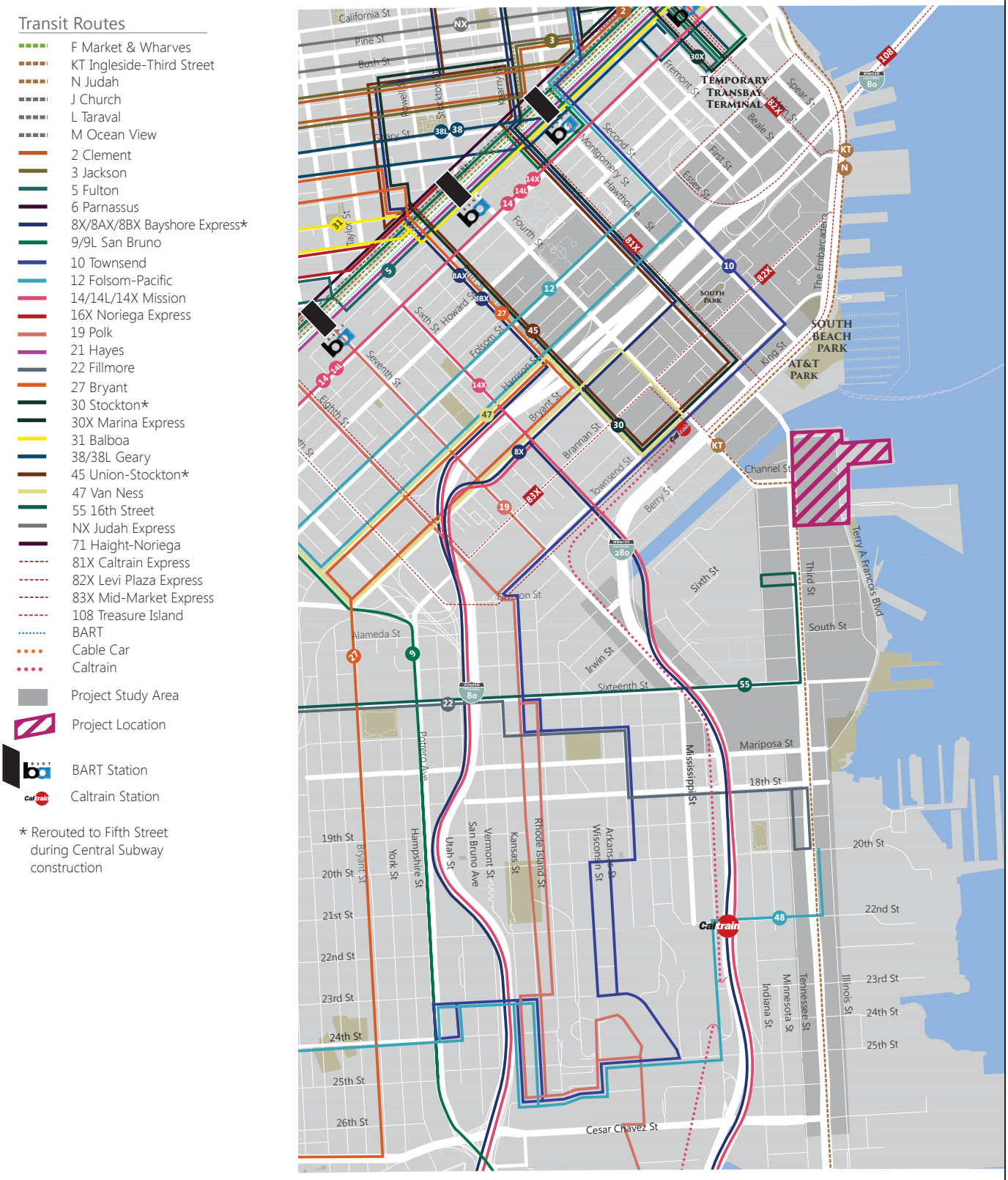
Source: San Francisco Planning Department, sftransportationmap.org, November 2016.

TRANSIT SERVICES IN SAN FRANCISCO AND BAY AREA

The project site is served by local transit provided by the San Francisco Municipal Railway (Muni), operated by the San Francisco Municipal Transportation Agency (SFMTA). Muni provides light-rail service adjacent to the project site on Third Street. Regional transit provides service to the East Bay via Bay Area Rapid Transit (BART) rail service, Alameda-Contra Costa Transit (AC Transit) buses, and Water Emergency Transportation Authority (WETA) ferries; service to the North Bay via Golden Gate Transit buses and ferries; and service to the Peninsula and South Bay via Caltrain and BART rail service and San Mateo County Transit (SamTrans) buses. Most regional transit services, with the exception of Caltrain, are generally not within a short walking distance of the project site, but can be reached by bicycle or from various Muni lines. The Fourth and King Caltrain station is approximately 0.3 miles northwest of the project site. The project site is approximately 1.2 to 1.7 miles south of Market Street BART stations and the Ferry Building, and approximately 1.3 miles south of the Temporary Transbay Terminal served by AC Transit. Figure 4.E-3, on the next page, presents the local and regional transit routes in the study area and in the Mission and SOMA neighborhoods.

MUNI

Muni provides transit service within the city and county of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car, and electric streetcar lines. Muni operates a number of bus and rail lines in the project vicinity. Table 4.E-4, on page 4.E-16, presents the 13 Muni routes that serve the project site and study area as of March 2015. The closest Muni stop to the project site is on the T Third line on Third Street at Mission Rock Street.



Source: Fehr & Peers, 2016.

Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
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Figure 4.E-3
Existing Transit Network

TABLE 4.E-4. LOCAL MUNI OPERATIONS

Route	A.M. Peak Period Weekday Headways (7 a.m. – 9 a.m.)[1]	P.M. Peak Period Weekday Headways (4 p.m. – 6 p.m.)[1]	Hours of Operation	Neighborhoods Served by Route
KT Ingleside/Third Street Light Rail	9	9	4:00 a.m. – 1:30 a.m.	Balboa Park, Market Street, Mission Bay, Visitacion Valley
N Judah	7	7	5:09 a.m. – 1:58 a.m. 4:38 a.m. – 1:33 a.m.	Ocean Beach, Market Street, SF Caltrain
10 Townsend	15	20	5:00 a.m. – 12:30 a.m.	Potrero Hill, China Basin, Financial District, Pacific Heights
12 Folsom-Pacific	20	20	5:24 a.m. – 12:06 a.m. 6:09 a.m. – 12:08 a.m.	Mission, SOMA, Nob Hill
22 Fillmore	9	8	24 hours per day	Marina, Fillmore, Potrero Hill
27 Bryant	15	15	5:16 a.m. – 1:10 a.m. 5:25 a.m. – 1:18 a.m.	Mission, SOMA, Nob Hill
30 Stockton	7	6	4:59 a.m. – 1:32 a.m. 5:35 a.m. – 1:29 a.m.	SOMA, Chinatown, Marina
45 Union-Stockton	8	12	5:39 a.m. – 12:45 a.m. 6:20 a.m. – 1:16 a.m.	Cow Hollow, Chinatown, SOMA
47 Van Ness	10	10	6:00 a.m. – 1:14 a.m. 5:43 a.m. – 1:14 a.m.	SOMA, Van Ness, Fisherman's Wharf
55 16th Street	15	15	6:00 a.m. – 12:20 a.m. 6:00 a.m. – 12:12 a.m.	Mission Bay, Potrero Hill, Mission
81X Caltrain Express	20	-	6:45 a.m. – 9:22 a.m. (Inbound)	Caltrain, Financial District, Transbay Terminal

Route	A.M. Peak Period Weekday Headways (7 a.m. – 9 a.m.)[1]	P.M. Peak Period Weekday Headways (4 p.m. – 6 p.m.)[1]	Hours of Operation	Neighborhoods Served by Route
82X Levi Plaza Express	20	15	6:04 a.m. – 9:25 a.m. 3:44 p.m. – 6:27 p.m.	Levi's Plaza, Financial District, SOMA
83X Mid-Market Express	16[2]	19[2]	7:08 a.m. – 11:01 a.m. 4:05 p.m. – 8:00 p.m.	SOMA

Source: Muni, 2015, prepared by Fehr & Peers, 2015

Note:

[1] These are current headways. Headway is scheduled time between buses, presented in minutes.

[2] Headways vary. Headway shown is an average headway for the corresponding peak-hour weekday schedule.

Muni transit operations in the study area were evaluated using two methods: capacity utilization and screenlines. Capacity utilization relates the number of passengers per transit vehicle to the design capacity of the vehicle. A capacity utilization analysis was conducted for the routes providing direct access to the project site based on each route's peak capacity utilization at its maximum load point (MLP), obtained from the SFMTA's automated passenger count database in September/October 2013.[6] The MLP is the location where the route has its highest number of passengers relative to its capacity. In general, the MLP for Muni routes is not located in the study area but is located in or beyond downtown San Francisco.

Capacity utilization during the a.m./p.m. peak periods was determined at the MLP for each route serving the study area. The capacity per vehicle includes both seated and standing capacity, where standing capacity is between 30 and 80 percent of seated capacity (depending on the specific transit vehicle configuration). The capacity of a light rail vehicle is 119 passengers; the capacity of a historic streetcar is 70 passengers; and the capacity of a standard bus is 63 passengers.

Table 4.E-5, on the next page, presents the a.m. and p.m. peak ridership and capacities at MLPs for transit routes serving the study area for both inbound and outbound directions[7]. On routes running in a north-south alignment, northbound is inbound (no matter where on the route) and southbound is outbound. On routes running in an east-west alignment, inbound is toward

[6] *Transit Data for Transportation Impact Studies*, technical memorandum, San Francisco Planning Department, May 15, 2015. The use of 2013 count data as a foundation for the baseline and cumulative analysis is standard practice, as documented in the memo.

[7] The inbound and outbound directions are based on the Muni operations direction.

TABLE 4.E-5. MUNI PEAK-HOUR LOAD AND CAPACITY UTILIZATION BY ROUTE

	A.M.			P.M.		
Route	Passenger Load[1]	Peak-Hour Capacity[2]	Capacity Utilization	Passenger Load[1]	Peak-Hour Capacity[2]	Capacity Utilization
T Embarcadero/Brannan (Inbound [IB])	350	793	44%	782	793	**98%**
T Embarcadero/Folsom (Outbound [OB])	833	793	**105%**	585	793	74%
N Judah (IB)	2,387	2,040	**117%**	843	2,197	38%
N Judah (OB)	530	2,040	26%	1,911	2,197	**87%**
10 Townsend (IB)	244	270	**90%**	168	189	**88%**
10 Townsend (OB)	208	252	82%	153	189	80%
12 Folsom Pacific (IB)	120	189	64%	138	189	73%
12 Folsom Pacific (OB)	132	189	69%	108	189	57%
22 Fillmore (IB)	293	420	70%	293	473	61%
22 Fillmore (OB)	267	420	63%	278	473	58%
27 Bryant (IB)	160	252	64%	152	252	60%
27 Bryant (OB)	164	252	65%	116	252	46%
30 Stockton (IB)	215	327	66%	615	1,224	50%
30 Stockton (OB)	470	690	68%	615	1,248	49%
45 Union-Stockton (IB)	353	473	75%	187	302	61%
45 Union-Stockton (OB)	368	473	77%	260	315	82%
47 Van Ness (IB)	270	378	71%	252	378	66%
47 Van Ness (OB)	282	378	74%	222	378	58%
55 16th Street (IB)[3]	—	—	—	—	—	—
55 16th Street (OB)[3]	—	—	—	—	—	—
81X Caltrain Express (IB)[4]	51	104	49%	—	—	—
82X Levi Plaza Express (IB)[5]	209	361	58%	—	—	—
82X Levi Plaza Express (OB)[6]	—	—	—	92	252	36%

Source: San Francisco Planning Department, Transit Data for Transportation Impact Studies, May 2015

Notes:

Bold indicates capacity utilization of 85 percent or greater.

[1] Peak-hour ridership.

[2] Total a.m./p.m. peak-period capacity in passengers per hour.

[3] Because the 55 16th Street is a new route, no data were available at the time of this writing.

[4] The 81X inbound only runs during the a.m. peak period and does not run during the p.m. peak period. The 81X does not run outbound during either a.m./p.m. peak period.

[5] The 82X inbound only runs during the a.m. peak period and does not run during the p.m. peak period.

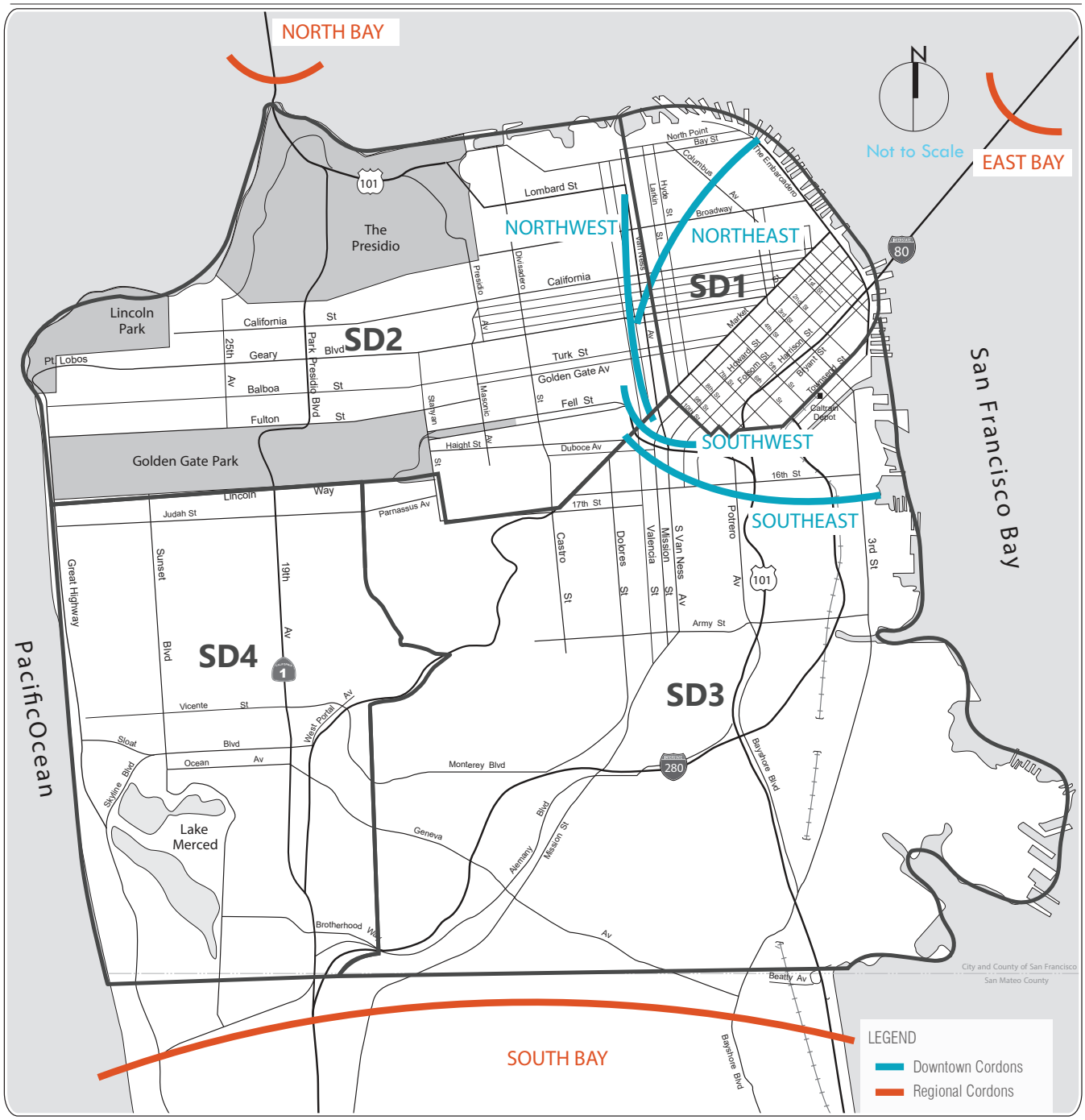
[6] The 82A outbound only runs during the p.m. peak period and does not run during the a.m. peak period.

downtown and outbound is away from downtown. Passenger loads range from 26 percent (N Outbound – a.m. peak hour) to 117 percent (N Inbound – a.m. peak hour) of capacity, and average 68 percent of capacity. Immediately adjacent to the study area, capacity utilization is generally lower than the utilization at the MLP. For example, the MLP for the N is at Duboce Avenue and Church Street; ridership on the N Judah through SOMA within the study area is substantially lower than the portion of the route along and west of Market Street.

Five Muni routes had passenger loads that exceeded 85 percent capacity utilization, which is SFMTA's standard maximum acceptable utilization, at their maximum load points during one or both peak hours, as summarized below.

- T Embarcadero/Brannan (Inbound or IB) – 98 percent utilization during p.m. peak hour
- T Embarcadero/Folsom (Outbound or OB) – 105 percent utilization during a.m. peak hour
- N Judah (IB) – 117 percent utilization during a.m. peak hour
- N Judah (OB) – 87 percent utilization during p.m. peak hour
- 10 Townsend (IB) – 90 percent utilization during a.m. peak hour and 88 percent utilization during p.m. peak hour

The assessment of existing transit conditions in San Francisco is also performed through the analysis of screenlines. Screenlines are hypothetical lines that would be crossed by persons traveling between downtown San Francisco and its vicinity (Super District 1) to or from other parts of San Francisco and the region (Super Districts 2, 3, and 4) (see Figure 4.E-4, on page 4.E-20). The project site is located in Super District 3. Four screenlines—northeast, northwest, southwest, and southeast—have been established in downtown San Francisco to facilitate the analysis of potential impacts of projects on Muni service. Subcorridors have been established within each screenline. The bus routes and light rail lines used in this screenline analysis are considered the major commute routes from the downtown area. Other bus routes, such as those with greater than 10-minute headways, are not included due to their generally lower ridership. Transit serving the project site crosses all four downtown screenlines. Table 4.E-6, on page 4.E-21, shows the groups of Muni routes in each of the downtown screenlines.



SOURCE: SF Transportation Impact Analysis Guidelines

SD = Superdistrict

Source: Fehr & Peers, 2017.

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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.E-4
Transit Screenlines and San Francisco Super Districts

TABLE 4.E-6. MUNI DOWNTOWN SCREENLINE GROUPINGS

Screenline and Subcorridor	Muni Routes Included in Group
Northeast	
Kearny/Stockton	8 Bayshore 30 Stockton 30X Marina Express 41 Union 45 Union-Stockton
Other lines	E Embarcadero[1] F Market and Wharves 10 Townsend 12 Folsom Pacific[2]
Northwest	
Geary	38 Geary 38R Geary Rapid 38AX Geary "A" Express 38BX Geary "B" Express
California	1 California 1AX California "A" Express 1BX California "B" Express
Sutter/Clement	2 Clement
Fulton/Hayes	5 Fulton 5R Fulton Rapid 21 Hayes
Balboa	31 Balboa 31AX Balboa "A" Express 31BX Balboa "B" Express
Southeast	
Third Street	T Third Street
Mission	14 Mission 14R Mission Rapid 14X Mission Express 49 Van Ness-Mission
San Bruno/Bayshore	8 Bayshore 8AX Bayshore "A" Express 8BX Bayshore "B" Express 9 San Bruno 9R San Bruno Rapid

Screenline and Subcorridor	Muni Routes Included in Group
Other lines	J Church
	10 Townsend
	12 Folsom Pacific[2]
	19 Polk[3]
	27 Bryant
Southwest	
Subway lines	K Ingleside
	L Taraval
	M Ocean View
	N Judah
Haight/Noriega	6 Haight/Parnassus
	7 Haight-Noriega
	7R Haight-Noriega Rapid
	7X Noriega Express
	NX Judah Express
Other lines	F Market and Wharves

Sources: Fehr & Peers, 2015; San Francisco Planning Department, Transit Data for Transportation Impact Studies, May 2015.

Notes:

[1] The E Embarcadero route, which started weekday service in late April 2016, is included in the baseline and cumulative scenarios.

[2] The 12 Folsom Pacific route will be realigned to better serve Rincon Hill. Alternative routes that current riders of the 12 Folsom Pacific route are assigned to for baseline and cumulative conditions are the 10 Townsend and a new 11 Downtown Circulator route.

[3] The 19 Polk route will be modified in the future to eliminate the portion of the route between San Francisco General Hospital, at 23rd Street and Potrero Avenue, and its southern terminus in Bayview-Hunters Point.

One project-specific transit cordon,[8] as described below, was identified for this project. The purpose for evaluating this cordon is to supplement the standard downtown screenlines, to capture the level of transit usage and capacity just north of the project site providing direct service into downtown San Francisco from the project area. The project-specific cordon encompasses transit routes that cross Townsend Street, from Fifth Street to Embarcadero and/or from Fifth Street between Townsend Street and Berry Street. This cordon includes the following lines:

- 10 Townsend
- 30 Stockton
- 45 Union/Stockton
- 47 Van Ness
- 81X Caltrain Express
- 83X Mid-Market Express
- N Judah
- KT Third Ingleside

In addition to evaluating the sum of the above eight routes at the project cordon, an assessment was conducted for the following individual routes at the maximum load point between the project site and Market Street.

- 30 Stockton
- 45 Union/Stockton
- N Judah
- KT Third Ingleside

An evaluation of all individual routes that comprise the "Other lines" subcorridors for both the Northeast and Southeast screenlines was conducted. The evaluation of these individual lines was conducted at the screenline maximum load point.

Northeast Screenline – Routes that Comprise "Other Lines" Subcorridor

- E Embarcadero
- 10 Townsend
- 12 Folsom Pacific
- F Market and Wharves
- 11 Downtown Circulator (future)

Southeast Screenline – Routes that Comprise "Other Lines" Subcorridor

- J Church
- 12 Folsom Pacific
- 27 Bryant
- 10 Townsend
- 19 Polk

[8] A transit cordon is a line drawn on a map across one or more transit routes. The project-specific transit cordon was established to measure the number of transit trips between the proposed project and the San Francisco Financial District through the SOMA neighborhood.

Ridership levels for the individual Muni routes and the project-specific transit cordon are shown for the highest line volume on each of the eight routes through SOMA between the proposed project and the Market Street BART stations. These locations were selected both because the intent of the project-specific transit cordon is to assess the impact of added transit trips between the proposed project and downtown, and because a large share of transit riders traveling from the proposed project along these routes through SOMA would be destined for BART (to the East Bay) and other regional transit providers at the Transbay Terminal.

Table 4.E-7A, on the next page, presents the existing ridership and capacity utilization at the MLP for the routes crossing the downtown screenlines during the weekday a.m./p.m. peak periods. The capacity utilization calculation uses a.m. data for the inbound direction and p.m. data for the outbound direction to align with the peak directions of travel and patronage loads for the Muni system to or from the downtown area during those periods. For all routes, with the exception of the T Third line, this directionality is counter to the direction in which the downtown MLP screenlines are assessed,

All downtown screenlines operate below Muni's 85 percent capacity utilization standard at their maximum load points in the a.m./p.m. peak periods, except for the southwest screenline in the a.m. peak (as a result of 102 percent utilization on the subway lines), which operates at 94 percent capacity utilization.

Some subcorridors within the Muni downtown screenlines currently exceed 85 percent capacity utilization. The Fulton/Hayes subcorridor within the northwest screenline operates at 90 percent utilization in the p.m. peak hour. The Third Street subcorridor within the southeast screenline operates at 99 percent utilization in the p.m. peak hour. The subway lines subcorridor within the southwest screenline operates at 102 percent utilization in the a.m. peak hour.

The project-specific cordon and four individual Muni routes that are evaluated, and shown at the bottom of Table 4.E-7A, on the next page, operate at acceptable utilization levels, as evaluated at their peak load points through SOMA.

Table 4.E-7B, page 4.E-26, provides data regarding the screenline maximum load point for the individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines. The 10 Townsend route operates at 89 percent utilization during the p.m. peak hour at the northeast screenline maximum load point. At the maximum load point for the southeast screenline, the J Church route operates at 95 percent utilization, and the 10 Townsend route operates at 90 percent utilization during the a.m. peak hour.

TABLE 4.E-7A. MUNI DOWNTOWN SCREENLINES AND PROJECT-SPECIFIC LINES – EXISTING CONDITIONS

	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
Screenline	**Ridership**	**Capacity**	**Utilization**	**Ridership**	**Capacity**	**Utilization**
Northeast						
Kearny/Stockton	2,211	3,050	73%	2,245	3,327	68%
Other lines	538	1,141	47%	683	1,078	63%
Screenline Total	*2,749*	*4,191*	*66%*	*2,928*	*4,405*	*67%*
Northwest						
Geary	1,821	2,490	73%	1,964	2,623	75%
California	1,610	2,010	80%	1,322	1,752	75%
Sutter/Clement	480	630	76%	425	630	68%
Fulton/Hayes	1,277	1,680	76%	1,184	1,323	**90%**
Balboa	758	1,019	74%	625	974	64%
Screenline Total	*5,946*	*7,828*	*76%*	*5,519*	*7,302*	*76%*
Southeast						
Third Street	350	793	44%	782	793	**99%**
Mission	1,643	2,509	66%	1,407	2,601	54%
San Bruno/Bayshore	1,689	2,134	79%	1,536	2,134	72%
Other lines	1,466	1,756	84%	1,084	1,675	65%
Screenline Total	*5,147*	*7,193*	*72%*	*4,810*	*7,203*	*67%*
Southwest						
Subway lines	6,330	6,205	**102%**	4,904	6,164	80%
Haight/Noriega	1,121	1,554	72%	977	1,554	63%
Other lines	465	700	67%	555	700	79%
Screenline Total	*7,916*	*8,459*	***94%***	*6,435*	*8,418*	*77%*
Muni Screenlines Total	*21,758*	*27,671*	*79%*	*19,693*	*27,328*	*72%*
Project-Specific Cordon						
Project-Specific Cordon Total	*2,168*	*5,000*	*43%*	*1,765*	*5,255*	*34%*
Individual Muni Routes at Project-Specific Cordon						
	A.M. Peak Hour			**P.M. Peak Hour**		
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Ridership**	**Capacity**	**Utilization**
30 Stockton IB	154	327	47%	314	1,224	26%
30 Stockton OB	454	690	66%	366	1,248	29%
45 Union/Stockton IB	275	473	58%	120	302	40%
45 Union/Stockton OB	351	473	74%	179	315	57%
N Judah IB	424	2,040	21%	433	2,197	20%
N Judah OB	445	2,040	22%	405	2,197	18%
KT Third Ingleside IB	381	793	48%	314	793	40%
KT Third Ingleside OB	310	793	39%	550	793	69%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for Transit Line Capacity Calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-7B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – EXISTING CONDITIONS

Screenline/Subcorridor Individual Muni Routes	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Northeast/Other Lines						
E Embarcadero[1]	—	—	—	—	—	—
F Market and Wharves	210	700	30%	377	700	54%
10 Townsend	208	252	83%	168	189	**89%**
12 Folsom Pacific	120	189	63%	138	189	73%
Southeast/Other Lines						
J Church	754	793	**95%**	539	793	68%
10 Townsend	244	270	**90%**	153	189	81%
12 Folsom Pacific	120	189	63%	108	189	57%
19 Polk	188	252	75%	168	252	67%
27 Bryant	160	252	63%	116	252	46%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

1. The E Embarcadero route, which started weekday service in late April 2016, is included in the baseline and cumulative scenarios.

The ridership and capacity data presented above are for the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

REGIONAL TRANSIT

The area around the project site is served by regional transit systems, which are accessible by bicycle, walking, or local Muni routes. Service is provided by Caltrain, BART, AC Transit, WETA, SamTrans, and Golden Gate Transit. Each transit system is briefly described below, and information on capacity utilization at regional screenlines is provided.

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 and 12:30 a.m. inbound (northbound) and 5:00 p.m. and 1:30 a.m. outbound (southbound). Caltrain service headways for Limited-Stop and Express ("Baby Bullet") trains during the a.m./p.m. peak periods are 10 minutes to 40 minutes, depending on the type of train. The peak direction of service is southbound during the a.m. peak period (7:00 to 9:00 a.m.) and northbound during the p.m. peak period (4:00 to 6:00 p.m.). Local service is not provided during a.m./p.m. peak periods. Caltrain service terminates at the San Francisco station at Fourth and King Streets, which is also within walking distance of the project site.

Another Caltrain station is located on 22nd Street between Indiana Street and Pennsylvania Avenue. Both stations can be accessed directly by Muni transit and are served by local, limited, and express Baby Bullet trains.

BART

BART provides regional commuter rail service between San Francisco and the East Bay (Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont) as well as between San Francisco and San Mateo County (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. In San Francisco, BART operates underground along Market Street to Civic Center Station where it turns south through the Mission District toward Daly City, running aboveground beginning at Balboa Park Station. The BART stations nearest to the study area are 16th Street Mission Station, 24th Street Mission Station, Civic Center/UN Plaza Station at Market Street/Seventh Street, Embarcadero Station at Market Street/Main Street, Montgomery Station at Market Street/Second Street, and Powell Station at Market Street/Fifth Street.

AC TRANSIT

AC Transit operates bus service in western Alameda and Contra Costa counties and has routes to San Francisco and San Mateo County. AC Transit operates 33 "Transbay" bus routes between the East Bay and the Temporary Transbay Terminal, temporarily located at Howard and Beale Streets in SOMA. The Temporary Transbay Terminal lies just outside of the study area and is easily accessible via Muni and regional transit lines. The majority of Transbay service is provided only during commute periods in the peak direction of travel, with headways between buses of 15 to 20 minutes. The peak direction of service is into San Francisco during the a.m. peak period and out of San Francisco during the p.m. peak period. All-day service is provided on a few lines, with headways of approximately 30 minutes.

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. WETA services operate from eight terminals in Alameda, Oakland, San Francisco, South San Francisco, and Vallejo. Ferry routes operate with 30 to 60 minute headways, depending on time and day of the week.

SAMTRANS

SamTrans operates bus service in San Mateo County. A few SamTrans routes also serve the Temporary Transbay Terminal in downtown San Francisco, including Routes 292, 397, and KX. Route 292 makes San Francisco stops along Potrero Avenue and Mission Street throughout the day. Headways during the a.m. peak period are between 15 and 30 minutes, and p.m. peak-hour headways are 15 minutes. Route 397 runs along Mission Street in San Francisco and serves

the Temporary Transbay Terminal. It is a late-night service route with headways of 60 minutes. Route KX operates only during the peak travel periods with 60-minute headways, and travels between the Temporary Transbay Terminal and Redwood City.

GOLDEN GATE TRANSIT

The Golden Gate Bridge, Highway, and Transportation District operates Golden Gate Transit, which provides bus and ferry service between the North Bay (Marin and Sonoma Counties) and San Francisco. Golden Gate Transit operates 22 commuter bus routes, nine basic bus routes, and 16 ferry feeder bus routes for ferries to San Francisco. Bus routes operate at headways of 15 to 90 minutes depending on time and day of week and bus type. Near the study area, Golden Gate Transit operates commuter and basic routes on Mission, Howard, Folsom, Sixth, and Eighth Streets. Golden Gate Transit also operates ferry service between the North Bay and San Francisco, connecting Larkspur and Sausalito with the Ferry Building during the morning and evening commute periods.

REGIONAL TRANSIT SCREENLINES

As is the case for Muni, transit service into and out of San Francisco on regional service providers is examined using a screenline analysis. The existing regional transit screenlines, as described in the SF Guidelines, were used to analyze regional transit capacity in the study area. Table 4.E-8, on the next page, presents the ridership and capacity utilization at the MLP for the regional screenlines during the weekday a.m./p.m. peak periods. For regional operators, the MLP is typically at the San Francisco city limit (i.e., the East Bay MLP would occur at the Transbay Tube and on the Bay Bridge; the North Bay MLP would occur at the Golden Gate Bridge; and the South Bay MLP would occur at the southern city border). Inbound travel (into downtown San Francisco) is analyzed during the a.m. weekday peak period, and outbound travel (out of downtown San Francisco) is analyzed during the p.m. weekday peak period.

For regional transit providers (except for BART), the established capacity utilization threshold is equal to the number of seated passengers per vehicle. For BART, the established capacity utilization threshold is 107 passengers per car, which includes all seats and accounts for some standees. All of the regional transit operators have a 1-hour load factor standard of 100 percent. As a result, the Planning Department uses 100 percent capacity utilization as a threshold of significance for determining a.m./p.m. peak period transit demand impacts to regional transit. As shown in Table 4.E-8, on the next page, the East Bay regional screenline currently exceeds its established capacity utilization standard in the a.m. peak hour and p.m. peak hour, primarily due to overcrowding on BART with ridership exceeding the 100 percent utilization threshold during both a.m. peak-hour (inbound) and p.m. peak-hour (outbound) conditions. Specifically, BART's capacity utilization on the East Bay regional screenline is 109 percent in the a.m. peak hour and 107 percent in the p.m. peak hour. As a result, the regional screenline between San Francisco and the East Bay is over its capacity utilization threshold in the a.m. peak hour at 102 percent. All other regional screenlines operate within established utilization standards.

TABLE 4.E-8. REGIONAL TRANSIT SCREENLINES – EXISTING CONDITIONS

Regional Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
East Bay						
BART	25,399	23,256	**109%**	24,488	22,784	**107%**
AC Transit	1,568	2,829	55%	2,256	3,926	57%
Ferries	810	1,170	69%	805	1,615	50%
Screenline Total	27,777	27,255	**102%**	27,549	28,325	97%
North Bay						
Golden Gate Transit Bus	1,330	2,543	52%	1,384	2,817	49%
Ferries	1,082	1,959	55%	968	1,959	49%
Screenline Total	2,412	4,502	54%	2,352	4,776	49%
South Bay						
BART	14,150	19,367	73%	13,500	18,900	71%
Caltrain	2,171	3,100	70%	2,377	3,100	77%
SamTrans	255	520	49%	141	320	44%
Ferries	—	—	—	—	—	—
Screenline Total	16,576	22,987	72%	16,018	22,320	72%
Regional Screenlines Total	46,765	54,744	85%	45,919	55,421	83%

Source: San Francisco Planning Department, Transit Data for Transportation Impact Studies, May 2015 and October 2016; Fehr & Peers, 2016. See Appendix 4-2 for transit line capacity calculations.

Notes:

Bold indicates capacity utilization of 100 percent or greater.

OTHER TRANSIT SERVICE PROVIDERS

MISSION BAY TRANSPORTATION MANAGEMENT ASSOCIATION

The Mission Bay Transportation Management Association (MBTMA) formed in conformance with mitigation measures identified in the Mission Bay redevelopment project's Supplemental Environmental Impact Report (SEIR). The MBTMA is financed with annual fees collected from commercial and residential owners. The MBTMA assists members in the residential areas of Mission Bay with identifying parking options within the immediate area, the use of a car-sharing program, and provision of a discounted transit pass program. The MBTMA also assists commercial tenants and employees with ride-share and carpool matching programs, shuttle service to public transit and transit access guides distributed within their workplace.

The MBTMA currently provides three shuttle route services between Powell BART Station, Caltrain, and Mission Bay. The services are offered every 30 minutes and are free of charge and open to all employees, residents, and visitors to Mission Bay. The MBTMA also performs outreach campaigns to residents to promote MUNI and Caltrain connections, with a target on solo drivers who work within 10 miles of Mission Bay, by use of a "trial" transit pass. In the

future, the MBTMA will be looking into establishing casual carpools at specific locations within Mission Bay. The MBTMA regularly surveys Mission Bay employees to coordinate with RIDES for zip code maps and acts as a liaison with property managers and business managers to promote the ongoing services.

PEDESTRIAN FACILITIES

NO-EVENT PEDESTRIAN CONDITIONS

In the SOMA neighborhood north of Mission Creek, the blocks are fairly large (with frontage lengths up to 900 feet) and some streets are relatively wide (most major streets are 60-75 feet wide, with major transit streets up to 125 feet wide), though selected streets (such as Townsend Street) have been recently reconfigured to improve the pedestrian environment. In Mission Bay, the area is largely under construction or planned for future construction. As a result, pedestrian facilities can be discontinuous in some areas.

A qualitative evaluation of existing pedestrian conditions was conducted during field visits to the study area in September 2013. The field visit identified a lack of pedestrian facilities at some of the 35 existing study intersections, including locations with missing sidewalks, crosswalks, Americans with Disabilities Act (ADA) curb ramps, and pedestrian countdown signals. Although some signalized intersections do not provide pedestrian countdown signals, at a minimum, basic pedestrian signal heads (with or without countdown indications) are currently provided at all study intersections. Since September 2013 due to the high construction activity, additional facilities have been completed as the area continues to buildout.

Pedestrian facilities generally are most complete in the area bounded by King Street, Howard Street, The Embarcadero, and Fifth Street. The majority of intersections in this area have adequate curb ramps, crosswalks, and only single turning lanes. However, south of Mission Creek, missing connections on the pedestrian network make walking difficult, due in some part because this portion of Mission Bay is currently building out.

General pedestrian impediments observed across the study area include:

- Narrow sidewalks.
- Intersections with no crosswalks.
- Construction zones that reduce sidewalk width or close crosswalks, at times for extended periods (e.g., months).
- Lack of ADA curb ramps or use of shared diagonal curb ramps at intersection corners.
- Freeway on- and off-ramps with short pedestrian crossing phases and/or high vehicle volumes turning into crosswalks across multiple traffic lanes.
- Long distances between intersections, particularly in the north-south direction, limiting crossing opportunities.

These pedestrian impediments are most prevalent along particular corridors, including Second Street, Fourth Street, Harrison Street, and Bryant Street north of Mission Creek, as well as Terry A. Francois Boulevard, 16th Street, and Mariposa Street south of Mission Creek. These corridors contain a majority of the intersections with multiple pedestrian impediments (i.e., missing or closed crosswalks, missing or diagonal curb ramps, and multiple turning lanes). Harrison Street and Bryant Street present particularly challenging pedestrian environments, with numerous freeway on- and off-ramps, very narrow sidewalks, and largely industrial or auto-centric land uses.

Particularly challenging conflict points between vehicles and pedestrians were observed along Second Street at Brannan Street and Bryant Street where northbound and eastbound traffic often block the intersection and crosswalks during the p.m. peak period. Drivers attempt to clear the Second Street/Bryant Street intersection when downstream traffic clears along Second Street or Bryant Street as they attempt to access the Bay Bridge, pushing through crosswalks while pedestrians are crossing during the walk phase. At times pedestrians are unable to cross during the walk phase due to vehicles blocking the crosswalk. Northbound through vehicle queues at Brannan also delay the eastbound left movement, resulting in drivers making aggressive turns into the north crosswalk during the shared signal phase.

Additionally, the intersection of Fourth Street and King Street is challenging for pedestrians due to a number of factors. The KT-Third Ingleside light-rail transit (LRT) station is in the middle of Fourth Street, south of King Street; the N Judah LRT Station is in the middle of King Street, west of Fourth Street; and the Fourth and King Caltrain Station (the system's northern terminus and busiest station) is on the northwest corner of the Fourth Street/King Street intersection. Additionally, there is a double-right turn lane from southbound Fourth Street to westbound King Street, which eventually turns into I-280. The high volume of pedestrians crossing at all legs of this intersection, transferring between transit routes at three different transit stations while traffic attempts to enter or exit I-280 at King Street creates a substantial number of conflicts between modes, particularly between pedestrians and vehicles.

Queues from the freeway on the Fifth Street on-ramp backed up onto the adjacent local street network, affecting pedestrians using the northeastern crosswalk. Also, no sidewalks exist on Terry A. Francois Boulevard between Pier 48 and China Basin Street or between South Street and Mariposa Street. Construction on the south side of 16th Street limited pedestrian movements at Third Street and at Owens Street.

Most pedestrian signal heads in the study area were countdown signal heads.

Currently, the project site has limited pedestrian facilities, with few sidewalks or crosswalks, particularly along Terry A. Francois Boulevard near Pier 48 and Pier 50. Pedestrian facilities improve along Third Street, which has consistent sidewalks. There is more activity along Third Street, particularly at light-rail stops. Reconstruction of a one-block segment of Mission Rock

Street, between Third Street and Terry A. Francois Boulevard, is complete and pending acceptance. The reconstruction includes the provision of 12-foot sidewalks on both sides of the street. The project site is not on the pedestrian high-injury network, identified in the Vision Zero SF initiatives (see "Vision Zero" under *Regulatory Framework*, below).

EVENT PEDESTRIAN CONDITIONS

During events at AT&T Park, SFMTA deploys officers to manage pedestrian and traffic flows through the area through a series of road closures and direct control of intersection operations. As part of this effort, additional space along the east side of Third Street is allocated for pedestrians because it is the primary route between the surface parking lot at Seawall Lot 337 and AT&T Park. Typically, one to two lanes are closed between Mission Rock Street and Berry Street beginning at approximately 5:30 p.m. and continuing until 7:30 p.m. for a 7:00 p.m. game start time.

Pedestrian volumes for the Third and Fourth Street bridges are derived from counts at the adjacent intersections. During a Giants game, the two easternmost lanes on the Third Street bridge are blocked off to vehicle traffic and used for pedestrians. Observations indicate that this space is made available to pedestrians starting between 5:30 p.m. and 6:00 p.m. The above analysis of pedestrian conditions is for the 5:00 to 6:00 p.m. peak hour because that time period represents the highest activity levels when combining background commute trips with pre-event trips. Because the closure of the travel lanes for pedestrians does not occur for some weekday evening games until 6:00 p.m., the analysis of pedestrian conditions for a weekday p.m. peak hour with a Giants game does not assume that the additional space is available to pedestrians. Pedestrian conditions during the 5:00–6:00 weekday p.m. peak hour with a Giants game, which are based on pedestrian level-of-service (LOS) calculations, as summarized in Table 4.E-9, on the next page, are LOS C or B over the Lefty O'Doul Bridge. Weeknight games typically start at approximately 7:15 p.m.; thus, pedestrian volumes collected during the study peak hour (5:00 to 6:00 p.m.) are lower than the volume of pedestrians immediately before a game when the easternmost vehicle travel lanes on the Third Street bridge are coned off for pedestrian use.

PEDESTRIAN LEVEL OF SERVICE

In addition to an evaluation of the overall quality of the pedestrian facilities in the study area, pedestrian crowding conditions were quantitatively evaluated at the bridges over Mission Creek at Third Street (Lefty O'Doul) and Fourth Street and at the intersection of Fourth Street and King Street during the three peak periods (a.m., p.m. without Giants game, and p.m. with Giants game). The analysis of crosswalks at the Fourth Street and King Street intersection was performed using the pedestrian crosswalk level of service (LOS) methodology in the *HCM 2000*[9]

[9] Transportation Research Board. 2000. *Highway Capacity Manual*. Fourth edition. Washington, DC: National Academies of Science.

TABLE 4.E-9. PEDESTRIAN CROSSWALK/SIDEWALK LEVEL OF SERVICE – EXISTING/BASELINE CONDITIONS

Analysis Locations	A.M. Peak Hour			P.M. Peak Hour without Giants Game			P.M. Peak Hour with Giants Game		
	Pedestrians per Hour	Level of Service		Pedestrians per Hour	Level of Service		Pedestrians per Hour	Level of Service	
		Measure of Effectiveness	LOS		Measure of Effectiveness	LOS		Measure of Effectiveness	LOS
Fourth Street/King Street[1]									
North	505	82	A	695	69	A	—	—	—
South	220	110	A	761	46	B	—	—	—
East	296	119	A	978	65	A	—	—	—
West	1,034	47	B	1,648	38	C	—	—	—
Third Street Bridge (Lefty O'Doul Bridge)[2]									
East	131	0.5	B	209	0.8	B	907	3.4	C
West	75	0.3	A	120	0.5	A	125	0.5	B
Fourth Street Bridge[2]									
East	50	0.2	A	19	0.1	A	28	0.1	A
West	145	0.5	B	213	0.8	B	205	0.8	B

Source: Fehr & Peers, 2014.

Notes:

Bold indicates crosswalk operations at LOS E or LOS F.

Measure of Effectiveness is in terms of square feet per pedestrian.

Measure of Effectiveness is in terms of pedestrians per minute per foot. The level of service (LOS) is presented for "platoon" conditions, which represent the conditions when pedestrians are walking together in a group.

and incorporates information on crosswalk dimensions, signal timing, and pedestrian volumes to determine the comfort level of each crossing. The analysis of sidewalks on the Third Street and Fourth Street bridges was performed using the sidewalk LOS methodology from *HCM 2000*. Pedestrian counts for this analysis were conducted in September 2013. Several locations were spot-checked in 2015; typical pedestrian volume increases were 5 to 10 percent higher than counts recorded in 2013, though some pedestrian volumes were lower. A sensitivity analysis was conducted using the spot-checked counts; the variation in volumes did not make a substantive difference in the analysis.

Using the HCM methodology, the City defined an upper limit for acceptable conditions, LOS D, which equals approximately 15 to 24 square feet per pedestrian for crosswalks and approximately 10 to 15 pedestrians per minute per foot for sidewalks. LOS E and F represent unacceptable conditions. At LOS E, normal walking gaits must be adjusted for congested conditions and independent movements are difficult; at LOS F, walking speeds are severely restricted.[10]

Table 4.E-9, on the prior page, presents pedestrian volumes and LOS at the crosswalks of the intersection of Fourth Street and King Street, as well as for the sidewalks on the two bridges over Mission Creek. The intersection of Fourth Street and King Street was not evaluated for the p.m. peak hour with a Giants game because the intersection is typically operated manually by a police officer, which generally ensures that pedestrians, while crowded, can maneuver through the intersection during such special events.

BICYCLE FACILITIES AND CIRCULATION

Bicycle facilities through the study area consist of bicycle paths, bicycle lanes, bicycle routes, and separated bikeways.

Bicycle Paths (Class I) provide a completely separated right-of-way for the shared use of cyclists and pedestrians. These facilities are off-street and minimize cross-flow traffic, but they can be adjacent to an existing roadway.

Bicycle Lanes (Class II) provide a striped, marked, and signed bicycle lane separated from vehicle traffic. These facilities are located on roadways and reserve a minimum of 4 to 5 feet of space for exclusive bicycle traffic.

Bicycle Routes (Class III) provide a shared travel lane marked and signed for shared use with motor vehicle traffic. These facilities may or may not be marked with "sharrows" to emphasize that the roadway space is shared.

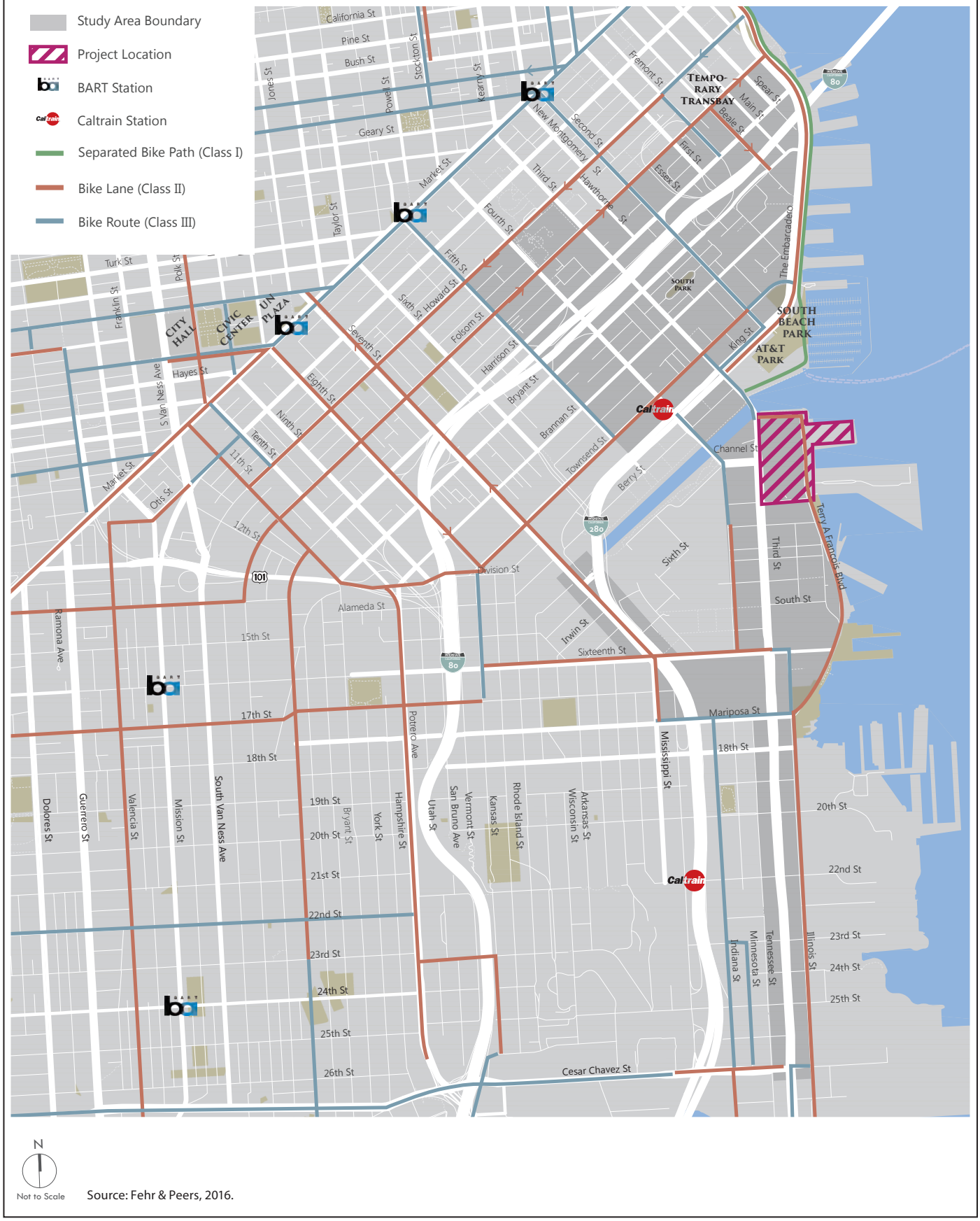
Separated Bikeways (Class IV) are bikeways for the exclusive use of bicycles and require a separation between the bikeway and through vehicle traffic. The separation may include grade separation, flexible posts, inflexible posts, inflexible barriers, or on-street parking.

[10] Analysis methodology and standards are included in the SF Guidelines.

Current on-street bicycle facilities, as designated by the San Francisco Bikeway Network Map (2013) are shown on a map of the project area in Figure 4.E-5, on the next page. The majority of the study area is flat, with limited changes in grades, facilitating bicycling within and through the area. No separate bicycle facilities are available at the Third Street or Fourth Street bridges for crossing Mission Creek to and from SOMA. Both bridges are identified as Class III bicycle facilities by the City.

Bicycle facilities are located on the following streets in the study area:

- **Embarcadero/Terry A. Francois Boulevard/Illinois Street –** Class II facility connects to the study area from the north at The Embarcadero/Folsom Street and continues south to King/Third Streets where it crosses Mission Creek and runs south down Terry A. Francois Boulevard and Illinois Street.
- **Indiana Street –** Class III facility runs along Indiana Street near the project area, connecting to Mariposa Street in the north and to Third Street via Cesar Chavez Street in the south.
- **Second Street –** Class III facility runs north and south along Second Street between King Street and Market Street. The route continues north of the study area up to Fisherman's Wharf.
- **Fifth Street –** Class III facility runs north and south along Fifth Street between Townsend Street and Market Street.
- **Seventh Street/Eighth Street –** Class II facility runs north along Seventh Street between Townsend Street and Market Street and south along Eighth Street between Market Street and Townsend Street. The facility continues south along Seventh Street to Mariposa Street via Mississippi Street and terminates at Illinois Street.
- **Townsend Street –** Class II facility runs east and west along Townsend Street between Eighth Street and Second Street. The facility continues to The Embarcadero east of Second Street as a Class III route and continues west of Eighth Street on Division Street as a Class II route.
- **16th Street –** Class II facility runs east and west in the study area along 16th Street. It continues west through the Twin Peaks neighborhood until it terminates in the west at the Great Highway via Kirkham Street through the Sunset neighborhood. The facility terminates in the east at Third Street.



Graphics ... 00836.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.E-5
Existing Bicycle Network

LOADING FACILITIES

Currently, there are no formal on-street commercial and passenger loading zones within or adjacent to the project site. No loading for events at AT&T Park occurs on the project site. The project site is currently occupied by a surface parking lot at Seawall Lot 337; no regular loading occurs on that lot. When special events occur on the lot, such as Cirque du Soleil shows between November and January, loading occurs during event setup and take-down. Pier 48 is currently used for parking during events and ball games at AT&T Park, for special events, and for storage. Although trucks destined for Pier 48 queue along Terry A. Francois Boulevard in parking areas located outside the through travel lanes and bike lanes, virtually all off-street freight loading and unloading occurs within the three existing sheds. No on-street commercial and passenger loading currently occurs on Third Street or Mission Rock Street. To access Pier 48, trucks use Terry A. Francois Boulevard from Third Street, Mission Rock Street, or Mariposa Street. From there, the trucks enter the parking areas or sheds. No curbs exist on the east side of Terry A. Francois Boulevard, allowing easy maneuvering into and out of Pier 48.

Most on-street parking in the project area requires a parking permit and is not designated for commercial loading. The current practice of short-term truck queuing along Terry A. Francois Boulevard creates potential conflicts with bicyclists and pedestrians because there are no sidewalks, and Terry A. Francois Boulevard has a Class II bicycle lane adjacent to Pier 48.

EMERGENCY ACCESS

Emergency transport vehicles typically use major streets through the study area when heading to and from an emergency and/or emergency facility. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to permit other traffic to maneuver out of the path of the emergency vehicle and yield the right-of-way.[11] The project site is just over ½ mile north of the UCSF Medical Center at Mission Bay. There are three San Francisco Fire Department fire stations near the study area: the Public Safety Building (Third Street between China Basin Street and Mission Rock Street, adjacent to the project site), Station 8 (Bluxome Street at Fourth Street, 0.5 mile from the project site) and Station 29 (16th Street at Vermont Street, 1.1 miles from the project site). The Public Safety Building located on Third Street at Mission Rock Street was completed in 2014 and became operational in early 2015. This new facility accommodates the headquarters of the San Francisco Police Department, the new Southern District police station, and a new fire station (i.e., Station 4). The fire station has access on Mission Rock Street between Third Street and Terry A. Francois Boulevard, immediately

[11] Per the California Vehicle Code, Section 21806, all vehicles must yield right-of-way to emergency vehicles and remain stopped until the emergency vehicle has passed.

adjacent to the study area. Fire truck ingress and egress occurs on the south side of Mission Rock Street, approximately 125 feet east of Third Street. The fire station driveway is approximately 56 feet wide. The police have two driveways to access the Public Safety Building, a primary driveway located on China Basin Street and a secondary driveway located on Mission Rock Street.

Emergency vehicle access to the project site is primarily from Third Street, which has two travel lanes in each direction, and Mission Rock Street. Emergency vehicles are allowed to use transit only lanes, such as the median LRT lanes on Third Street, when mixed flow lanes are congested.

PARKING CONDITIONS

This section provides an inventory of existing on-street and off-street parking facilities in the study area. Information on off-street and metered on-street parking is available through SFpark, a SFMTA program that employs adjustable meter and garage pricing to achieve a balance between available parking spaces and demand. The remaining parking data were collected through surveys of the parking study area conducted in September 2013[12] for this analysis.

ON-STREET PARKING

There are 718 on-street parking spaces in the parking study area bounded by Fourth Street on the west, 16th Street on the south, Terry A. Francois Boulevard/Third Street/King Street/Second Street on the east, and Townsend Street on the north. Of the total parking inventory, 191 parking spaces are unmetered 2-hour parking spaces, while the rest are metered. More than 85 percent of the 527 metered spaces are general metered parking (GMP). Motorcycle parking and commercial loading each make up approximately 5 percent of the metered parking spaces in the parking study area. There are no residential permit parking (RPP) spaces in the parking study area.

Nearly all 527 metered parking spaces in the parking study area are on major streets, and metered spaces make up the vast majority of major street parking. Major streets in the parking study area include Townsend Street, Second Street, Third Street north of Mission Creek, Fourth Street, Terry A. Francois Boulevard, and east/west roadways between Fourth Street and Terry A. Francois Boulevard south of Mission Creek. Select block faces in the parking study area prohibit all parking, including all of Third Street south of Mission Creek.

A total of 95 on-street parking spaces are provided within the project site along Terry A. Francois Boulevard. During a Giants game, Terry A. Francois Boulevard is blocked off at Third Street. No parking is allowed on Terry A. Francois Boulevard during this time, which accounts for the reduction of approximately 33 parking spaces in the overall on-street parking supply during event conditions.

[12] Existing parking data are provided for the fall of 2013, the date for release of the proposed project's NOP, as is standard practice.

Table 4.E-10, below, summarizes the number of on-street parking spaces in the parking study area by location and type, as well as the number occupied during three different analysis periods (midday, evening without a Giants game, and evening with a Giants game).

TABLE 4.E-10. ON-STREET PARKING SPACES BY TYPE

Parking Type	Number of Spaces	Occupied Midday (1:30–3:00 p.m.)	Occupied Evening without Giants game (6:30–8:00 p.m.)	Occupied Evening (6:30–8:00 p.m.) with Giants Game[1]
Metered	527	365	187	366
General	450	335	161	324 (of 418)
Motorcycle	24	16	8	19
Commercial Loading	28	5	8	9
Short-Term (30 min or less)	11	7	8	6
Disabled	14	2	2	8 (of 13)
Unmetered — 2-Hour limit	191	169	60	112
Total	718	534	247	478

Source: SFpark, 2013; prepared by Fehr & Peers, 2014.

Notes:

1. Parking spaces on Terry A. Francois Boulevard were unavailable during the Giants game.

The most frequently noted instances of illegal on-street parking on major streets in the parking study area were vehicles parked in active driveways and vehicles parked in red zones (a red curb indicates no parking at any time). Additionally, some vehicles illegally parked at white curbs in passenger loading zones, some vehicles parked at meters during designated commercial vehicle-only hours, and some vehicles parked at expired meters or during restricted hours.

Overall, nearly 75 percent of the on-street public parking was occupied during the midday period (1:30 p.m. to 3:00 p.m.) and 34 percent was occupied during the evening period without a Giants game (6:30 p.m. to 8:00 p.m.). On Giants game days, nearly 70 percent of the on-street parking spaces were occupied during the evening period (6:30 p.m. to 8:00 p.m.). Much of the area is an "event metering area," in which the meters are active and prices are higher than during nonevent times. Depending on the proximity to AT&T Park, the rates for these spaces are $3, $5, or $7 per hour with a time limit of 4 hours.

North of Mission Creek, 83 percent of on-street parking was occupied during the midday period and 70 percent was occupied during the evening without a Giants game. During a Giants game, 88 percent of on-street parking was occupied. South of Mission Creek, 71 percent of on-street parking was occupied during the midday period and 21 percent was occupied during the evening without a Giants game. During a Giants game, 63 percent of on-street parking was occupied.

OFF-STREET PARKING

There are 17 off-street parking facilities within the parking study area, 15 of which were open during the September 2013 data collection. Although Lots B, C, and D were open for event parking at AT&T Park during the data collection period for this assessment, they have since been closed to event parking. These lots are to be eliminated with buildout of Mission Bay. At the time of the surveys, two lots were fenced off between China Basin Street/ Mission Bay Boulevard (North)/Third Street/Fourth Street and Terry A. Francois Boulevard/ Third Street/16th Street/South Street.

Combined, the 12 remaining off-street parking facilities provide just fewer than 6,760 general parking spaces (including spaces for the disabled) and more than 30 motorcycle spaces. With the exception of Pier 48 parking, all of the general parking spaces are for paid public parking; spaces reserved for permit holders, customers, and commercial/government uses were not included in this study. No off-street facilities within the parking study area provide free publicly available parking.

Lot A on Seawall Lot 337 and Pier 48 are used as parking lots for Giants games and other large events at AT&T Park, with Lot A providing 2,170 parking spaces and Pier 48 providing up to 700 parking spaces. Lot A is also used for commuter parking.

All but two of the 12 paid public parking facilities are privately owned. The Pier 48 parking facilities are owned by the Port, and the 1650 Third Street lot is owned by UCSF. Hours of operation vary across the off-street paid public parking facilities, though most are available only between 7:00 a.m. and 7:00 p.m. Typically, the lot is open between 6:00 a.m. and 12:00 a.m. It is by far the largest off-street parking facility in the area, providing approximately 2,170 parking spaces.

Table 4.E-11, on the next page, lists each lot's owner, type (garage/lot), hours of operation, and parking capacity as well as the demand during the data collection periods.

TABLE 4.E-11. OFF-STREET PARKING FACILITIES

				Parking Capacity		Parking Demand		
Address	Owner	Garage or Lot	Hours of Operation	General Parking[2]	Motor-cycle Parking[2]	Midday (1:30 p.m. – 3:00 p.m.)	Evening without Giants game (6:30 p.m.–8:00 p.m.)	Evening with Giants Game[1] (6:30 p.m.–8:00 p.m.)
136 Townsend Street	Private	Garage	7 a.m. – 7 p.m.	110	—	85	—	97
148 Townsend Street	Private	Garage	7 a.m. – 7 p.m.	75	—	52	—	66
153 Townsend Street	Private	Garage	7 a.m. – 7 p.m.	365	—	245	—	301
178 Townsend Street	Private	Garage	7 a.m. – 7 p.m.	80	—	61	—	76
215 Townsend Street	Private	Garage	7 a.m. – 7 p.m.	750	—	441	—	267
224 Townsend Street	Private	Garage	7 a.m. – 7 p.m.	80	—	47	—	69
185 Berry Street	Private	Garage	N/A	268	—	175	104	209
Pier 48[1]	Port	Garage	N/A	700	—	-	-	437
Giants Lot A – Seawall Lot 337[3]	Private	Lot	6 a.m. – 12 a.m.	2,194	—	529	99	1,392
1650 Third Street	UCSF	Both	24 hour	720	—	671	321	557
450 South Street	Private	Garage	7 a.m. – 7 p.m.	1,368	32	1,083	84	255
Terry A. Francois Boulevard	Private	Lot	7 a.m. – 7 p.m.	50	—	2	2	1
Total Available (midday)	—	—	—	6,060	32	—	—	—
Total Available (evening without Giants)	—	—	—	4,600	32	—	—	—
Total Available (evening with Giants)	—	—	—	6,760	32	—	—	—
Total (All)	—	—	—	6,760	32	3,391 (55.7%)	610 (13.2%)	3,727 (54.9%)

Address	Owner	Garage or Lot	Hours of Operation	Parking Capacity: General Parking[2]	Parking Capacity: Motor-cycle Parking[2]	Parking Demand: Midday (1:30 p.m. – 3:00 p.m.)	Parking Demand: Evening without Giants game (6:30 p.m.–8:00 p.m.)	Parking Demand: Evening with Giants Game[1] (6:30 p.m.–8:00 p.m.)

Source: SFpark, 2013; prepared by Fehr & Peers, 2015.

Notes:

[1] Pier 48 was only open for parking (via lease from the Port Authority) during the Giants game data collection period.

[2] The number of general parking spaces includes parking spaces for the disabled. The number of disabled and motorcycle parking spaces was not available at every location.

[3] The capacity of 2,194 spaces in Lot A includes 2,170 general parking spaces and 24 disabled parking spaces. Although Lots B, C, and D were open for parking during the data collection period, they have since been closed to game day parking and, thus, are not included in the above table. These parking lots were planned to be eliminated with development of Mission Bay.

Based on field observations, 56 percent of the off-street public parking was occupied during the midday (1:30 p.m. to 3:00 p.m.) period and 13 percent was occupied during the weekday evening period (6:30 p.m. to 8:00 p.m.) without a Giants game. During the weekday evening period with a Giants game, slightly less than 55 percent of the off-street parking spaces were occupied. Pier 48 and Giants Lot A have a combined occupancy rate of 64 percent. If all vehicles that previously parked in Giants Lots B, C, and D (which are no longer available for AT&T Park event parking) during the weekday evening period with a Giants game shifted to either Lot A or Pier 48, the combined occupancy rate of these lots would increase to 76 percent.

North of Mission Creek, all but one parking garage is closed during the evening period when there is no Giants game. All parking garages north of Mission Creek are open during the evening period with a Giants game. Sixty-four percent of off-street parking was occupied during the midday period, 39 percent was occupied during the evening period without a Giants game, and 63 percent was occupied during the evening period with a Giants weekday game.

South of Mission Creek, 52 percent of off-street parking was occupied during the midday period and 12 percent was occupied during the evening period without a Giants game. During a Giants game, 52 percent of off-street parking was occupied.

BASELINE CONDITIONS

The analyses in CEQA documents typically present the existing environmental setting conditions as the baseline conditions against which conditions with the project are compared to determine whether an impact is significant. However, in the study area, multiple land development projects and transportation infrastructure improvements are either recently occupied, under construction, or approved and funded and will be under construction or completed by the time the proposed project is under construction. Because the area is changing rapidly, and there are known development and infrastructure projects under way, for purposes of the transportation analysis, a baseline that takes into account these conditions in addition to existing conditions is appropriate.

Basing the baseline conditions on existing conditions plus conditions that will exist with projects and infrastructure that were either under construction or approved and funded for construction at the end of July 2015,[13] and would be completed prior to or during construction of the proposed project, allows the EIR to fully and accurately identify the transportation system conditions that will be in place when the proposed project commences occupancy. Projects that were approved

[13] The NOP for the proposed project was released in 2013. Following the release of the NOP, the proposed building heights for the proposed project were reduced in response to neighborhood concerns. These adjusted reduced heights were approved by the voters with the passage of Proposition D in 2015. At that time, it was determined that a July 2015 baseline scenario would be added to account for new development and infrastructure projects that had been approved since the NOP was released.

after July 2015 are analyzed as part of the cumulative scenario. The local transit capacity improvements, such as the Central Subway, were added to existing conditions to provide a reasonable baseline for the analysis of transit impacts.[14]

BASELINE PROJECTS FOR OPERATIONAL IMPACTS

The projects that are taken into account in the baseline condition, in addition to existing projects and infrastructure, are as follows:

- UCSF Medical Center/Mission Bay Hospital/Mission Hall (Global Health and Clinical Sciences Building at the UCSF Mission Bay campus)
- Public Safety Building located at 1245 Third Street
- La Scuola Italian International School, an Italian immersion school with a preschool campus on 20th Street in Mission Bay
- 20th Street Historic Buildings development, an approved rehabilitation of historic buildings on 20th Street between Illinois and Louisiana Streets
- Central Subway
- 16th Street Transit Lanes
- T Third Short Line Loop
- Muni Bus Line 55 16th Street bus route
- Near-term Muni Forward capacity improvements[15] to 10 Townsend, 12 Folsom, 22 Fillmore, and 30 Stockton as well as new 11 Downtown Circulator route
- Street improvements along Owens and Mariposa Streets at the I-280 on- and off-ramps. This includes the extension of Owens Street between 16th Street and Mariposa Street
- Second Street Improvement Project
- Plus ten private residential and mixed-use development projects located throughout Mission Bay[16]

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[14] The Muni transit analysis is based on a SF-CHAMP model run that includes ridership projections for 2020 and planned capacity assuming that the Central Subway project and other approved and funded transit improvements would be in operation by the time the proposed project is approved and under construction.

[15] Near-term Muni Forward capacity improvements are those that will be completed by 2020. Some of the listed routes above, such as the 10 Townsend, have both near-term capacity improvements that are included in the baseline scenario as well as long-term capacity improvements that are included in the cumulative scenario.

[16] The list of ten private residential and mixed-use development projects included in the baseline scenario is provided in the Mission Rock Transportation Impact Study, April, 2017.

No changes from existing conditions to baseline conditions have been identified for the pedestrian network, loading facilities, or emergency services access, except for those immediately adjacent to and a part of the improvements referenced above.

TRANSIT BASELINE

Table 4.E-12A, on the next page, presents peak-hour ridership and capacity utilization at the Muni downtown screenlines, the project-specific cordon, and the four individual Muni routes at the project-specific cordon serving the project site for both the a.m./p.m. peak periods under baseline conditions. The ridership data provided are from a 2020 SF-CHAMP model run provided by the San Francisco County Transportation Authority (SFCTA).

As shown in Table 4.E-12A, on the next page, under baseline conditions all screenlines would operate below Muni's 85 percent capacity utilization standard, except for the southwest screenline in the a.m. peak period. The southwest screenline would operate at 92 percent capacity utilization overall during the a.m. peak hour, in part as a result of the 97 percent utilization on the subway lines, but would be reduced from 102 percent on the subway lines and 94 percent for the southwest screenline as a whole compared to existing conditions because of changes in capacities and ridership as a result of Muni Forward improvements and Central Subway/T-Third short line improvements. The "other lines" subcorridor within the southeast screenline shows 92 percent capacity utilization in the a.m. peak hour; because the southeast screenline shows 64 percent capacity utilization overall in the a.m. peak hour, conditions on that screenline are considered acceptable.

The project-specific cordon and four individual Muni routes that are evaluated at their peak load points through SOMA, and shown at the bottom of Table 4.E-12A on the next page, would operate at acceptable utilization levels, with one exception. The 30 Stockton route OB would operate at 90 percent utilization during the p.m. peak hour under baseline conditions.

Table 4.E-12B, page 4.E-47, shows data regarding the screenline maximum load point for the individual Muni routes that comprise the "other lines" subcorridor for the northeast and southeast screenlines. The 10 Townsend route would operate at 97 percent utilization during the a.m. peak hour and 123 percent utilization during the p.m. peak hour at the northeast screenline maximum load point under baseline conditions. At the maximum load point for the southeast screenline, the J Church route would operate at 99 percent utilization, and the 10 Townsend route would operate at 120 percent utilization during the a.m. peak hour and 95 percent during the p.m. peak hour under baseline conditions.

Table 4.E-13, on page 4.E-48, presents the regional transit screenline ridership and capacity utilization with baseline conditions. The East Bay screenline would continue to exceed its capacity utilization standard in the a.m. and p.m. peak hours. The East Bay screenline shows 109 percent capacity utilization in the a.m. peak hour for BART and 102 percent overall capacity

TABLE 4.E-12A. MUNI DOWNTOWN SCREENLINES AND PROJECT-SPECIFIC ROUTES – BASELINE CONDITIONS

	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
Screenline	**Ridership**	**Capacity**	**Utilization**	**Ridership**	**Capacity**	**Utilization**
Northeast						
Kearny/Stockton	2,273	3,157	72%	2,444	3,327	73%
Other lines	867	1,470	59%	1,134	1,750	65%
Screenline Total	3,140	4,627	68%	*3,578*	*5,077*	*70%*
Northwest						
Geary	2,302	3,763	61%	2,913	3,621	80%
California	1,436	2,010	71%	1,349	1,752	77%
Sutter/Clement	514	630	82%	523	630	83%
Fulton/Hayes	1,505	2,237	67%	1,544	1,838	84%
Balboa	553	1,008	55%	537	974	55%
Screenline Total	*6,310*	*9,648*	*65%*	*6,866*	*8,815*	*78%*
Southeast						
Third Street	1,025	3,808	27%	1,836	3,808	48%
Mission	2,155	2,632	82%	1,927	2,632	73%
San Bruno/Bayshore	1,867	2,197	**85%**	1,035	2,134	49%
Other lines	1,577	1,712	**92%**	1,213	1,612	75%
Screenline Total	*6,624*	*10,349*	*64%*	*6,011*	*10,186*	*59%*
Southwest						
Subway lines	6,783	7,020	**97%**	5,433	6,804	80%
Haight/Noriega	1,178	1,596	74%	1,065	1,596	67%
Other lines	474	560	**85%**	655	840	78%
Screenline Total	*8,435*	*9,176*	***92%***	*7,153*	*9,240*	*77%*
Muni Screenlines Total	*24,509*	*33,800*	*73%*	*23,608*	*33,318*	*71%*
Project-Specific Cordon						
Project-Specific Cordon Total	*4,022*	*9,090*	*44%*	*3,426*	*8,292*	*41%*
Individual Muni Routes at Project-Specific Cordon						
	A.M. Peak Hour			**P.M. Peak Hour**		
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Ridership**	**Capacity**	**Utilization**
30 Stockton IB	134	705	19%	338	470	72%
30 Stockton OB	485	705	69%	424	470	**90%**
45 Union/Stockton IB	223	473	47%	108	315	34%
45 Union/Stockton OB	347	473	73%	222	315	70%
N Judah IB	408	2,596	16%	413	2,380	17%
N Judah OB	415	2,596	16%	298	2,380	13%
T Third IB	1,097	3,808	29%	1,940	3,808	51%
T Third OB	1,931	3,808	51%	1,742	3,808	46%

Notes:

Bold indicates capacity utilization of 85 percent or greater.

Source: SFCTA, Baseline Forecasts. Fehr & Peers, 2016. See Appendix 4-2 for Transit Line Capacity Calculations.

TABLE 4.E-12B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – BASELINE CONDITIONS

Screenline/Subcorridor Individual Muni Routes	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Northeast/Other Lines						
E Embarcadero	63	280	23%	89	280	32%
F Market and Wharves	406	560	73%	517	840	62%
10 Townsend	304	315	**97%**	386	315	**123%**
11 Downtown Circulator	94	315	30%	142	315	45%
12 Folsom Pacific	—	—	—	—	—	—
Southeast/Other Lines						
J Church	883	893	**99%**	642	793	81%
10 Townsend	378	315	**120%**	299	315	**95%**
12 Folsom Pacific	-	-	-	-	-	-
19 Polk	188	252	75%	168	252	67%
27 Bryant	128	252	51%	104	252	41%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-13. REGIONAL TRANSIT SCREENLINES – BASELINE CONDITIONS

Regional Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
East Bay						
BART	28,000	25,680	**109%**	27,000	25,680	**105%**
AC Transit	1,596	2,829	56%	2,297	3,926	59%
Ferries	818	1,170	70%	813	1,615	50%
Screenline Total	*30,414*	*29,679*	***102%***	*30,110*	*31,221*	*96%*
North Bay						
Golden Gate Transit Bus	1,344	2,543	53%	1,399	2,817	50%
Ferries	1,088	1,959	56%	973	1,959	50%
Screenline Total	*2,432*	4,502	54%	*2,372*	*4,776*	*50%*
South Bay						
BART	16,000	21,400	75%	15,000	21,400	70%
Caltrain	2,258	3,100	73%	2,472	3,100	80%
SamTrans	266	520	51%	147	320	46%
Ferries	-	-	-	-	-	-
Screenline Total	*18,524*	*25,020*	*74%*	*17,619*	*24,820*	*71%*
Regional Screenlines Total	*51,370*	*59,201*	*87%*	*50,101*	*60,817*	*82%*

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015 and October 2016; Fehr & Peers, 2016.

Notes:

Bold indicates capacity utilization of 100 percent or greater.

utilization in the a.m. peak hour. The East Bay screenline shows 105 percent capacity utilization in the p.m. peak hour for BART and 96 percent overall capacity utilization in the p.m. peak hour. As under existing conditions, this would be primarily due to overcrowding on BART lines to and from the East Bay.

Due to planned service increases to the South Bay between now and baseline conditions, the South Bay screenline would improve to operate within its utilization threshold in both peak hours. All other regional transit service systems would continue to operate within their capacity utilization standards.

BICYCLE NETWORK BASELINE

Under baseline conditions, it is assumed that new bicycle lanes will be in place on Second Street between King Street and Market Street. These bicycle lanes are part of the Second Street Improvement Project, which will begin construction in 2017 and be completed in 2018.

Other near-term improvements in the San Francisco Bike Plan within the study area on Fifth Street, Fremont Street, and 16th Street, are not funded and, therefore, are included in cumulative conditions.

PEDESTRIAN NETWORK BASELINE

Under baseline conditions, it is assumed that pedestrian-related improvements will be in place on Second Street between King Street and Market Street. These accessibility improvements are part of the Second Street Improvement Project, which will begin construction in 2017 and be completed in 2018.

Pedestrian improvements that are currently in the final stages of construction on Mission Rock Street, between Third Street and Terry A. Francois Boulevard, are also assumed to be in place.

REGULATORY FRAMEWORK

This section provides a summary of the plans and policies of the City, and regional, state, and federal agencies that have policy and regulatory control over the project site. These plans and policies include the *San Francisco General Plan*, the *San Francisco Bicycle Plan*, and the *Transit-First Policy*.

FEDERAL

There are no federal transportation regulations applicable to the proposed project.

STATE

SENATE BILL 743 AND PUBLIC RESOURCES CODE SECTION 21099

Senate Bill (SB) 743 amended CEQA by adding Public Resources Code Section 21099. In 2013, SB 743 added Section 21099 to CEQA. CEQA Section 21099(b)(1) requires that the State Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the "reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." Potential metrics OPR may recommend to measure transportation impacts may include VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. CEQA Section 21099(b)(2) states that upon certification of the revised CEQA Guidelines for determining transportation impacts, pursuant to Section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. Section 21099(c) provides that OPR also may adopt guidelines with alternative metrics to use for traffic levels of service for transportation impacts that apply outside transit priority areas. Section 21099 also addresses

the analysis of parking impacts for certain urban infill projects in transit priority areas.[17] Public Resources Code 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."

As explained in Chapter 4, *Environmental Setting and Impacts*, with the exception of the brewery portion of the proposed project, which would not fit within the generally accepted classification of a mixed-use residential development, the project would otherwise meet the criteria in Section 21099(d). The brewery constitutes an estimated 10 percent of the approximately 2.5 million gross square feet (gsf) of proposed development; thus, it would be reasonable to consider the predominant uses proposed for the site (residential, commercial, and industrial) when determining compliance with Section 21099(d) and conclude that the proposed project meets the criteria. However, because the whole of the proposed project would not strictly meet the criterion of being a residential, mixed-use residential, or employment center project, the conservative approach applied in this EIR is to analyze the impacts of the proposed project on parking.

REGIONAL

SAN FRANCISCO BAY TRAIL PLAN

The Association of Bay Area Governments (ABAG) administers the *San Francisco Bay Trail Plan* (Bay Trail). The Bay Trail is a multi-purpose recreational trail that, when complete, would encircle San Francisco Bay and San Pablo Bay with a continuous 500-mile network of bicycling and hiking trails; to date, approximately 340 miles of the alignment have been completed. The *2005 Gap Analysis Study*, prepared by ABAG for the entire Bay Trail area, attempted to identify the remaining gaps in the Bay Trail system; classify the gaps by phase, county, and benefit ranking; develop cost estimates for individual gap completion; identify strategies and actions to overcome gaps; and present an overall cost and timeframe for completion of the Bay Trail system.

[17] 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.

LOCAL

TRANSIT-FIRST POLICY

In 1998, voters in San Francisco voters amended the City Charter (Charter Article 8A, Section 8A.115) to include a Transit-First Policy, which was first articulated as a City priority policy by the Board of Supervisors in 1973. The *Transit-First Policy* is a set of principles that underscore the City's commitment that travel by transit, bicycle, and foot be given priority over the private automobile. These principles are embodied in the policies and objectives of the Transportation Element of the *San Francisco General Plan*. All City boards, commissions, and departments are required, by law, to implement transit-first principles in concluding City affairs.

SAN FRANCISCO GENERAL PLAN

The Transportation Element of the *San Francisco General Plan* is composed of objectives and policies that relate to the eight 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 the following objectives and policies that are directly pertinent to consideration of the proposed project:

- Objective 2: Use the transportation system as a means for guiding development and improving the environment.
- Policy 2.1: Use rapid transit and other transportation improvements in the city and region as the catalyst for desirable development, and coordinate new facilities with public and private development.
- Policy 2.4: Organize the transportation system to reinforce community identity, improve linkages among interrelated activities, and provide focus for community activities.
- Policy 2.5: Provide incentives for the use of transit, carpools, vanpools, walking, and bicycling and reduce the need for new or expanded automobile and automobile parking facilities.
- Objective 8: Maintain and enhance regional pedestrian, hiking, and biking access to the coast, the Bay, and ridge trails.
- Policy 8.1: Ensure that the Coast Trail, Bay Trail, and Ridge Trail remain uninterrupted.
- Objective 11: Establish public transit as the primary mode of transportation in San Francisco and as a means through which to guide future development and improve regional mobility and air quality.
- Policy 11.3: Encourage development that efficiently coordinates land use with transit service, requiring that developers address transit concerns as well as mitigate traffic problems.

- Objective 14: Develop and implement a plan for operational changes and land use policies that will maintain mobility and safety, despite a rise in travel demand that could otherwise result in system capacity deficiencies.
- Policy 14.2: Ensure that traffic signals are timed and phased to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multimodal transportation system.
- Policy 14.3: Improve transit operation by implementing strategies that facilitate and prioritize transit vehicle movement and loading.
- Policy 14.4: Reduce congestion by encouraging alternatives to the single-occupancy auto through the reservation of right-of-way and enhancement of other facilities dedicated to multiple modes of transportation.
- Policy 14.7: Encourage the use of transit and other alternative modes of travel to the private automobile through the positioning of building entrances and the convenient location of support facilities that prioritizes access from these modes.
- Objective 16: Develop and implement programs that will efficiently manage the supply of parking at employment centers throughout the city so as to discourage single-occupant ridership and encourage ridesharing, transit, and other alternatives to the single-occupant automobile.
- Policy 16.5: Reduce parking demand through limiting the absolute amount of spaces and prioritizing the spaces for short-term and ride-share uses.
- Policy 16.6: Encourage alternatives to the private automobile by locating public transit access and ride-share vehicle and bicycle parking at more close-in and convenient locations onsite, and by locating parking facilities for single-occupant vehicles more remotely.
- Objective 18: Establish a street hierarchy system in which the function and design of each street are consistent with the character and use of the adjacent land.
- Policy 18.2: Design streets for a level of traffic that serves, but will not cause a detrimental impact on, adjacent land uses or eliminate the efficient and safe movement of transit vehicles and bicycles.
- Policy 18.5: Mitigate and reduce impacts of automobile traffic in and around parks and along shoreline recreation area.
- Objective 23: Improve the city's pedestrian circulation system to provide for efficient, pleasant, and safe movement.
- Policy 23.2: Widen sidewalks where intensive commercial, recreational, or institutional activity is present and where residential densities are high.

- Policy 23.3: Maintain a strong presumption against reducing sidewalk widths, eliminating crosswalks, and forcing indirect crossings to accommodate automobile traffic.
- Policy 23.6: Ensure convenient and safe pedestrian crossings by minimizing the distance pedestrians must walk to cross a street.
- Objective 24: Improve the ambiance of the pedestrian environment.
- Objective 28: Provide secure and convenient parking facilities for bicycles.
- Policy 28.1: Provide secure bicycle parking in new governmental, commercial, and residential developments.
- Policy 28.3: Provide parking facilities which are safe, secure, and convenient.
- Objective 30: Ensure that the provision of new or enlarged parking facilities does not adversely affect the livability and desirability of the city and its various neighborhoods.
- Policy 30.1: Assure that new or enlarged parking facilities meet need, locational and design criteria.
- Policy 30.5: In any large development, allocate a portion of the provided off-street parking spaces for compact automobiles, vanpools, bicycles and motorcycles commensurate with standards that are, at a minimum, representative of their proportion of the city's vehicle population.
- Policy 30.8: Consider lowering the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.
- Objective 34: Relate the amount of parking in residential areas and neighborhood commercial districts to the capacity of the city's street system and land use patterns.
- Policy 34.1: Regulate off-street parking in new housing so as to guarantee needed spaces without requiring excesses and to encourage low auto ownership in neighborhoods that are well served by transit and are convenient to neighborhood shopping.
- Policy 34.3: Permit minimal or reduced off-street parking for new buildings in residential and commercial areas adjacent to transit centers and along transit preferential streets.
- Objective 35: Meet short-term parking needs in neighborhood shopping districts consistent with preservation of a desirable environment for pedestrians and residents.
- Policy 35.1: Provide convenient on-street parking specifically designed to meet the needs of shoppers dependent upon automobiles.
- Policy 35.2: Assure that new neighborhood shopping district parking facilities and other auto-oriented uses meet established guidelines.

SAN FRANCISCO BICYCLE PLAN

The San Francisco Bicycle Plan *(Bike Plan)* describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode. The Bike Plan identifies the citywide bicycle route network, and establishes the level of treatment (i.e., Class I, Class II or Class III facility) on each route. The Bike Plan also identifies near-term improvements that could be implemented within the next 5 years, as well as policy goals, objectives and actions to support these improvements. The Bike Plan includes long-term improvements and minor improvements that would be implemented to facilitate bicycling in San Francisco.

BETTER STREETS PLAN

The San Francisco Better Streets Plan focuses on creating a positive pedestrian environment through measures such as careful streetscape design and traffic calming measures to increase pedestrian safety. The Better Streets Plan includes guidelines for the pedestrian environment, defined as the areas of the street where people walk, sit, shop, play, or interact. In general, the guidelines are for design of sidewalks and crosswalks; however, in some cases the San Francisco *Better Streets Plan* includes guidelines for other areas of the roadway, particularly at intersections.

VISION ZERO

Vision Zero is a policy adopted by both the San Francisco Board of Supervisors and the SFMTA to eliminate all traffic deaths in San Francisco by the year 2024. The goal of Vision Zero is also to reduce severe injury inequities across neighborhoods, transportation modes, and populations. Some actions SFMTA has and will take to improve pedestrian safety include safer signal timing at intersections, adding "continental" crosswalks (crosswalks with zebra striping), "leading" pedestrian signals that allow pedestrians to get a head start at signalized intersections, red zones at intersections to improve visibility, and pedestrian bulbs to shorten pedestrian crossing distances.

CLIMATE ACTION PLAN

In response to overwhelming scientific evidence suggesting that human behavior is accelerating climate change, the City adopted a *Climate Action Plan* to address steps and actions that the City could take to reduce its contribution to climate change. The *Climate Action Plan* describes the effects that climate change may have on San Francisco based on scientific research and presents an inventory of San Francisco's contribution to GHG emissions—the leading human contributor toward accelerating climate change. The plan also recommends a GHG reduction target and describes specific measures that the City could take to reach its target—including recommendations for reducing trips by automobile.

TRANSPORTATION SUSTAINABILITY PROGRAM

The *Transportation Sustainability Program* is an effort to reconcile the increasing demand for transportation within San Francisco with the very limited right-of-way available. The Program aims to achieve a more efficient transportation system through a three-pronged approach. The Program calls for improved investment in transportation infrastructure, alignment of the City's environmental review processes with City policies, and adopting new practices supporting a shift in travel from single-occupant vehicles to other, more space-efficient modes of travel.

The Transportation Sustainability Program comprises three components: enhance transportation to support growth (invest), modernize environmental review (align), and encourage sustainable travel (shift). The first component was initiated in November 2015 when a transportation sustainability fee ordinance was enacted. The transportation sustainability fee provided for investment in the transportation network by having developers pay their fair share to help offset the effects of growth. The second component involved adoption of a CEQA reform resolution by the Planning Commission in March 2016. The CEQA reform changed how the City analyzes the impacts of new developments on the transportation system so that it better aligns with the City's longstanding environmental policies (e.g., reducing GHG emissions, implementing active transportation improvements, and encouraging infill development). The Planning Commission resolution removed automobile delay as a significant impact on the environment and replaced it with a VMT threshold for all CEQA environmental determinations going forward. The third component involved implementing a TDM Ordinance, approved by the Board of Supervisors in February 2017, which requires new developments to incorporate "design features, incentives, and tools" to reduce VMT. New development projects would be required to choose from a menu of options to develop an overall plan for TDM, subject to certain modifications that may be made for large projects (such as the proposed project) subject to a development agreement. Each development project's TDM plan will require monitoring and reporting to the Planning Department to demonstrate compliance.

WATERFRONT TRANSPORTATION ASSESSMENT

SFMTA and the Transportation Authority worked with other City agencies, regional transportation providers, and community members to assess future transportation system needs along the east side of the city, beginning in 2012. Phase 2 of the Waterfront Transportation Assessment (WTA) studied the SOMA area, Mission Bay, and the Central Waterfront south to Cesar Chavez Street.[18] The Phase 2 report (WTA Phase 2) was completed in August 2015. The purpose of the WTA was to identify future transportation facility needs to accommodate growth in the city and an expected increase in travel demand of approximately 50

[18] SFMTA and the Transportation Authority, Waterfront Transportation Assessment, Phase 2, SOMA, Mission Bay, Central Waterfront Transportation Analysis Final Report, August 2015.

percent in the SOMA and Central Waterfront areas by 2040. The WTA Phase 2 concluded that mode shifts from car to other modes will be necessary if growth in transportation demand is to be accommodated and that those shifts will need to be not only from car to transit but also from car to bicycle and walking. The necessary mode shifts are likely to occur only if there are improvements to the transportation facilities (bicycle, pedestrian, and transit infrastructure) and their safety coupled with TDM strategies.[19] The WTA is a planning tool, with support from technical analysis. The WTA does not present policies or objectives that would directly affect land use decisions. It does present recommendations for improvements that could support population and job growth in the Central Waterfront neighborhoods.

ENVIRONMENTAL IMPACTS

This section describes the impact analysis related to transportation and circulation for the proposed project. This section also describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The significance criteria listed below are organized by mode to facilitate the transportation impact analysis; however, the transportation significance thresholds are essentially the same as those in the environmental checklist (Appendix G of the *CEQA Guidelines*), as proposed to amended by OPR. For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project would result in a significant impact on transportation and circulation:

- **Vehicle Miles Traveled**
    - The project would have a significant effect on the environment if it would cause substantial additional VMT.
    - The project would have a significant effect on the environment if it would substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network.
- **Transit** – The project would have a significant effect on the environment if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service; or cause a substantial

[19] SFMTA, The Transportation Authority, ARUP, Nelson/Nygaard, *Waterfront Transportation Assessment, Phase 2 SOMA, Mission Bay, Central Waterfront Transportation Analysis, Appendix A: Technical Report*, August 2015, p. 5.

increase in delays or operating costs such that significant adverse impacts in transit service levels could result. With the Muni and regional transit screenlines analyses, the project would have a significant effect on the transit provider if project-related transit trips would cause the capacity utilization standard to be exceeded during the a.m./p.m. peak periods. For screenlines that already operate above the utilization standard during the peak hour, a project would have a significant effect on the transit provider if project-related transit trips were more than 5 percent of total transit trips during the peak hour.

- **Pedestrians** – A project would have a significant effect on the environment if it would result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.
- **Bicycles** – A project would have a significant effect on the environment if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.
- **Loading** – A project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed onsite loading facilities or within convenient on-street loading zones, and if it would create potentially hazardous traffic conditions or significant delays affecting transit, bicycles or pedestrians.
- **Traffic** – The project would have a significant adverse impact if it would cause major traffic hazards.
- **Emergency Vehicle Access** – The project would have a significant effect on the environment if it would result in inadequate emergency access.
- **Construction** – Construction of the project would have a significant effect on the environment if, in consideration of the project site location and other relevant project characteristics, the temporary construction activities' duration and magnitude would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, thereby resulting in potential hazardous conditions.
- **Parking** – The project would have a significant effect on the environment if it would result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians and where particular characteristics of the project or its site demonstrably render use of other modes infeasible.

As described in the Notice of Preparation/Initial Study (Appendix 1), the project site is not located within an area covered by an airport land use plan or within 2 miles of a public airport or public use airport; nor is it within the vicinity of a private airstrip. Therefore, implementation of the proposed project or its variants or alternatives would not result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks; accordingly, these issues are not addressed in this EIR.

PROJECT FEATURES

DEVELOPMENT PROGRAM

The project site, which is owned by the Port of San Francisco, encompasses approximately 28 acres and includes several sub-areas (e.g., Seawall Lot 337, Pier 48, China Basin Park, adjacent streets and access areas). The project site is located in the Mission Bay neighborhood of the city, adjacent to the Mission Bay South Redevelopment Plan area.

Seawall Lot 337 is currently a surface parking lot and does not contain any structures, with the exception of small parking pay station kiosks and a billboard. The existing surface lot provides approximately 2,170 parking spaces for patrons of AT&T Park and daytime commuters, and also is used for occasional special events, such as Cirque du Soleil and Cavalia. Pier 48 includes two one-story sheds used for parking (only for AT&T Park events) and special events, which are connected by a third one-story shed.

The project includes expansion of the existing China Basin Park and two new park/open space areas within a central square and along the waterfront. The project would have a total of approximately 8 acres of new and expanded parks and improved shoreline access. All 11 development blocks on Seawall Lot 337 would include a mix of commercial/office, retail, and market-rate and affordable residential uses. One of these 11 above-grade blocks (Block D2) would include an 837,230 gsf, 10-level, 2,300-space parking structure. An additional below-grade 250,000 gsf, three-level parking structure with approximately 700 spaces would be located below Mission Rock Square and adjacent streets, with access from the Third Street/Channel Street intersection to the west. Small amounts of parking (up to 10 spaces) would be located below grade, at grade, or above grade within each of the 11 development blocks (other than Block D2, which would have the parking structure), for a total of up to 100 additional spaces. Parking could also be included on Pier 48 as an interim use but only until completion of the proposed Pier 48 rehabilitation and improvements.

PROJECT TRANSPORTATION CHANGES ASSUMED IN THE ANALYSIS

Chapter 2, *Project Description*, summarizes the transportation and circulation changes that are included in the proposed project, and presents the TDM Program with strategies to discourage the use of automobiles and encourage transit and sustainable modes of transportation. The roadway network changes, transit changes, bicycle circulation changes, pedestrian circulation changes, on-street loading provisions, and the TDM Program that are assumed in the transportation and circulation analyses of the proposed project are expanded on below, based on the Mission Rock Transportation Plan,[20] the Mission Rock Design Controls,[21] the Mission Rock TDM Strategy,[22] and the Mission Rock Infrastructure Plan.[23] Although the TDM Program measures would be included in the proposed project, the analysis does not include specific reductions in the overall travel demand calculations as a result of any of these specific features. The changes and TDM Program would be the same for both the High Residential Assumption and the High Commercial Assumption.

ROADWAY AND BICYCLE NETWORK CHANGES

Figure 4.E-6, on the next page, shows the proposed project street network and traffic control plan. A new traffic signal would be constructed at the new intersection of Third Street/Exposition Street. The existing traffic signal at Third Street/Terry A. Francois Boulevard intersection would be modified to serve a pedestrian crossing. All-way stop control would be provided at all internal intersections except for the intersection of Bridgeview Street/Long Bridge Street which would have stop controls only on the Long Bridge Street approaches.

Figure 4.E-7, page 4.E-61, shows the project street network, the project bicycle circulation concept, and existing and planned traffic signals on Third Street along the project frontage. This section describes the streets that would be constructed or modified by the proposed project as well as the location of access points for proposed project parking facilities. The two subsequent sections describe how circulation on the project site would work for bicycles and vehicles when accessing the proposed project's parking facilities.

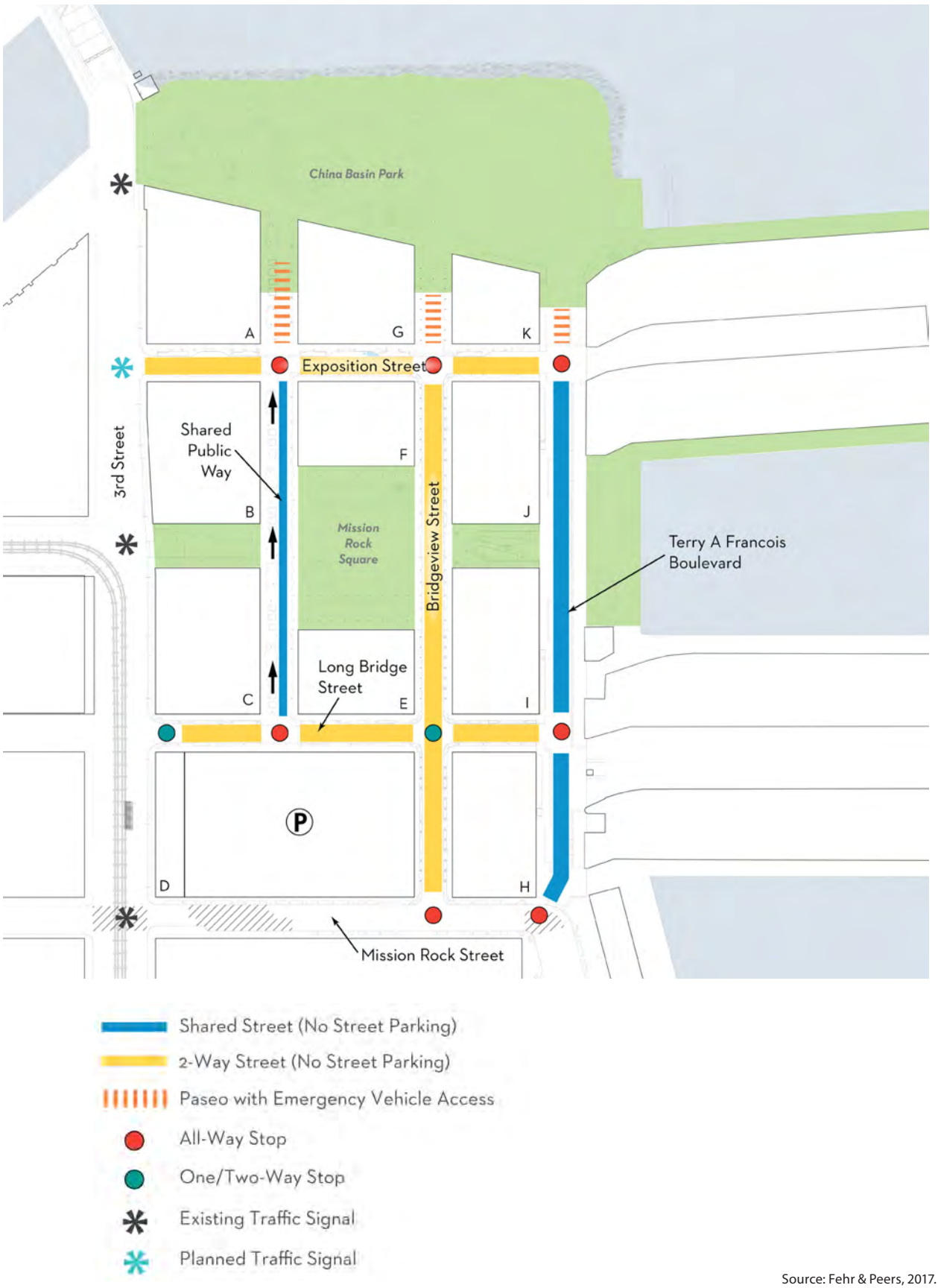
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[20] Mission Rock Transportation Plan, August 31, 2016.

[21] Mission Rock Design Controls, January 9, 2017.

[22] Mission Rock Transportation Demand Management Strategy, Nelson\Nygaard, January 18, 2017, hereinafter referred to as the "TDM Program".

[23] Mission Rock Infrastructure Plan, BKF Engineers, September 20, 2016.



Source: Fehr & Peers, 2017.

Graphics ... 00336.13 (4-20-17)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.E-6
Proposed Project Traffic Control



Source: Fehr & Peers, 2017.

Graphics ... 00336.13 (4-20-17)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.E-7
Proposed Project Bicycle Circulation Concept

The project site would be accessible via Third Street, Mission Rock Street, and Terry A. Francois Boulevard, which are all existing streets. The project would include vehicular, bicycle, pedestrian, and parking changes to accommodate the increase in on-site activity. The existing streets and proposed streets serving the project site are described below.

- **Third Street.** The segment of Third Street between Channel Street and the Lefty O'Doul Bridge would be enhanced with replacement sidewalks, curbs, and gutters on the eastern side of the street. A new 12-foot-wide sidewalk would be constructed on the east side of the street. The existing east–west section of Terry A. Francois Boulevard, including the connection to Third Street, would be eliminated to allow for expansion of China Basin Park. The existing traffic signal at the intersection of Third Street/Terry A. Francois Boulevard would be retained for bicycle and pedestrian crossings of Third Street. New east–west interior neighborhood streets that would be constructed by the project, between Third Street and the north–south section of Terry A. Francois Boulevard, are Exposition Street and Long Bridge Street. Third Street would be restriped to allow for two 11-foot-wide travel lanes in each direction as well as a new southbound left-turn lane at Exposition Street. A traffic signal would be installed at the new intersection of Third Street/Exposition Street, with all movements allowed including the southbound left turn. During Giants games and major events at AT&T Park, southbound left-turn movements for vehicles would be restricted. Changes on the western side of Third Street are planned and would be provided as part of the implementation of Mission Bay Redevelopment Plan and, therefore, are not included as part of the proposed project.
- **Mission Rock Street.** Mission Rock Street would serve as a primary access route to the 2,300-space parking garage (Block D2), waterfront uses along Terry A. Francois Boulevard, and the Blue Greenway. A 12-foot-wide sidewalk would be constructed on the north side of the street. A two-way cycle track would be provided on the north side of the street between Bridgeview Street and the Blue Greenway along Terry A. Francois Boulevard. The roadway would accommodate two-way vehicular traffic, with two eastbound travel lanes and one westbound travel lane. Two access points to the Block D2 parking garage would be located on Mission Rock Street between Third Street and Bridgeview Street. The internal intersection at Mission Rock Street and Bridgeview Street would be controlled by an all-way stop control.
- **Terry A. Francois Boulevard.** Terry A. Francois Boulevard would be a working waterfront street that would support active maritime, industrial, and production uses at the waterfront. This shared curbless street would include a new section to the Blue Greenway that would connect to China Basin Park and The Embarcadero, thereby contributing to uninterrupted public Bay access along San Francisco's eastern waterfront. Terry A. Francois Boulevard would include a 24-foot-wide area for social

spaces and three 9-foot-wide loading zones adjacent to Blocks H, I, and J on the west side of the street; a vehicular turnaround at the north end of the street with two vehicle loading/drop-off spaces adjacent to Block K; a 12-foot-wide pedestrian throughway on the west side of the street adjacent to the social space/loading zones; a 26-foot-wide shared zone for pedestrians and vehicles; and the Blue Greenway (with a minimum width of 16 feet) adjacent to the Bay and Piers 48 and 50 on the east side of the street. The shared zone would accommodate two-way vehicular traffic. The shared street would follow street design approaches along key walking corridors and streets, per the Better Streets Plan standards. Visual and tactile cues (e.g., changes in the color or texture of pavers, bollards, street furniture, light fixtures, plantings, tactile warning strips) would differentiate areas that would be dedicated to pedestrian movement and areas that would be shared by pedestrians, bicycles, and vehicles. This cross-section would extend from Mission Rock Street to the new terminus of Terry A. Francois Boulevard, just north of Exposition Street.

- **Exposition Street.** Exposition Street would be a new east–west interior neighborhood street that would support residential and commercial uses between Third Street and Terry A. Francois Boulevard. A new traffic signal would be installed at the intersection of Third Street and Exposition Street. Sidewalks on Exposition Street would be 12 feet wide along the north side and 14 feet wide along the south side. A 5-foot-wide Class II bike lane would be provided in the westbound direction. The 26-foot-wide roadway would accommodate two-way vehicular traffic and the bike lane. The Exposition Street/Shared Public Way intersection would be a raised intersection. The internal intersections at Bridgeview Street and the Shared Public Way would be controlled by all-way stop controls. The 60-foot right-of-way for Exposition Street would also include a 9-foot-wide shared loading and stormwater zone on the north side of the street. Three on-street loading/servicing zones would be provided on the north side of the roadway. Four passenger accessible loading spaces would also be provided on the north side of the roadway.

- **Shared Public Way.** The proposed Shared Public Way would be a new north–south promenade located one block east of Third Street, extending from the proposed Long Bridge Street to the south to just beyond Exposition Street to the north. The public way would give priority to pedestrians over bicycles and automobiles. This street would consist of a single shared 60-foot-wide paved surface with no curbs or gutters. Vehicles on the Shared Public Way would be limited to northbound travel in the shared zone for drop-offs, pickups, and deliveries. The Shared Public Way would include a streetlife zone adjacent to the shared zone, providing space for street rooms, stormwater gardens, and tree groves to activate ground-floor retail uses. Raised intersections, with visual/tactile detection surfaces marking the pedestrian route, would be provided at Exposition Street and Long Bridge Streets. Two on-street loading zones would be

provided on the west side of the roadway. At times when AT&T Park hosts games or other major events, the Shared Public Way would be for pedestrian use and restricted to emergency vehicles only.

- **Channel Street/Channel Lane.** Channel Street would link Third Street to the Shared Public Way for bicycles and pedestrians and provide vehicle access to the Mission Rock Square parking garage. One 11-foot travel lane would be provided in each direction on the ramp down to the garage from the Third Street/Channel Street intersection, with at-grade pedestrian throughways on either side of the ramp connecting to Mission Rock Square. Raised barriers would separate the at-grade pedestrian throughways and the garage ramp. During non-event days, the only access to the Mission Rock Square parking garage would be via the Third Street/Channel Street intersection. Channel Lane, east of Mission Rock Square, would include an exit ramp from the underground garage to Terry A. Francois Boulevard. Channel Lane would also include pedestrian throughways, on either side of the exit ramp from the garage, for people traveling between Mission Rock Square and Channel Wharf. As with the Channel Street garage access, raised barriers would separate the at-grade pedestrian throughways and the garage ramp. The Channel Lane exit ramp from the underground garage to Terry A. Francois Boulevard would be closed at all times except during Giants games and major AT&T Park events. As such, vehicular traffic from the underground garage would not exit onto Terry A. Francois Boulevard via the Channel Lane exit ramp during weekday a.m. or p.m. peak hours under nonevent conditions. The purpose of the exit ramp is to allow non-event parkers to exit onto Terry A. Francois, thereby reducing congestion on Third Street, during event periods. A portion of both Channel Street and Channel Lane would include a ramp that would descend from Third Street and Terry A. Francois Boulevard, respectively, under the Shared Public Way and Bridgeview Street for access to the underground parking garage below Mission Rock Square at the center of the project site.
- **Long Bridge Street.** Long Bridge Street would be a new east-west interior neighborhood street that would support residential and commercial uses between Third Street and Terry A. Francois Boulevard, provide access to the Block D2 parking garage, and provide access to the Shared Public Way. All-way stop control would be provided at the intersection with Shared Public Way and side-street stop control at Bridgeview Street. The Long Bridge Street/Shared Public Way and Long Bridge Street/Bridgeview Street intersections would be raised intersections. Long Bridge Street would have one 10.5-foot-wide travel lane in each direction, a 9-foot-wide shared loading and stormwater zone, 15-foot-wide sidewalks on each side of the street, three on-street loading zones on the north side of the street, two vehicular access points to the 2,300-space parking garage (Block D2) on the south side of the street just east of Third Street, and shared bicycle lane markings (i.e., sharrows) for both travel directions.

- **Bridgeview Street.** Bridgeview Street would be a new north-south interior neighborhood street that would support residential and commercial uses between Mission Rock Street and the paseo to China Basin Park and provide access to the Block D2 parking garage. All-way stop control would be provided at the intersection with Exposition Street and side-street stop control at Long Bridge Street. Bridgeview Street would have one 10.5-foot-wide travel lane in each direction, a 12-foot-wide sidewalk on the west side of the street and a 14-foot-wide sidewalk on the east side of the street, a raised two-way 10-foot-wide cycle track with a 3-foot-wide buffer (including 1 foot for the curb) on the east side of the street, and two vehicular access points to the 2,300-space parking garage (Block D2) on the west side of the street between Mission Rock Street and Long Bridge Street.

BICYCLE CIRCULATION AND PARKING

The proposed project would include on-street bicycle facilities on several streets:

- Between Mission Rock Street and China Basin Park, a new section of the Blue Greenway would be provided consisting of a two-way north-south cycle track with a minimum width of 16 feet along Terry A. Francois Boulevard;
- Between Mission Rock Street and Exposition Street, a raised two-way north-south 13-foot-wide cycle track would be provided along the east side of Bridgeview Street;
- Between Exposition Street and the Third Street Bridge, a 5-foot-wide Class II bike lane with a buffer would be provided in the northbound direction on the east side of Third Street;
- Between Bridgeview Street and Terry A. Francois Boulevard, a two-way east-west cycle track would be provided on the north side of Mission Rock Street;
- Between Third Street and Terry A. Francois Boulevard, a 5-foot-wide Class II bike lane would be provided in the westbound direction and sharrows in the eastbound direction on Exposition Street; and
- Sharrows would also be provided along Long Bridge Street in both directions.

The project would provide bicycle parking facilities, including a network of spaces in public areas and secure spaces inside the site's residential and office buildings. The project may also include Bay Area Bike Share pods on the site. The High Residential Assumption would provide 2,090 Class I bicycle parking facilities and 692 Class II bicycle racks. The High Commercial Assumption would provide 1,715 Class I bicycle parking facilities and 675 Class II bicycle racks. Bike parking facilities could be located on the ground-floor or basement level of project buildings, as well as scattered throughout the district (e.g., in plaza areas, building entries, open space), in accordance with the Mission Rock Special Use District (SUD) and Design Controls. Lockers and showers would also be provided to encourage cycling.

PARKING

Driveway curb cuts for the new off-street parking facilities, other than the Block D2 garage, would occupy approximately 10 to 25 of horizontal feet of frontage. The two driveways on Mission Rock Street for the Block D2 garage, would occupy approximately 40-55 feet of frontage, on the eastern and western driveways, respectively. All other Block D2 garage driveway curb cuts would occupy approximately 26 feet of frontage. Each block will also be permitted one driveway to off-street loading or parking (maximum 10 off-street spaces per block) for individual buildings on its Exposition or Long Bridge street frontage.

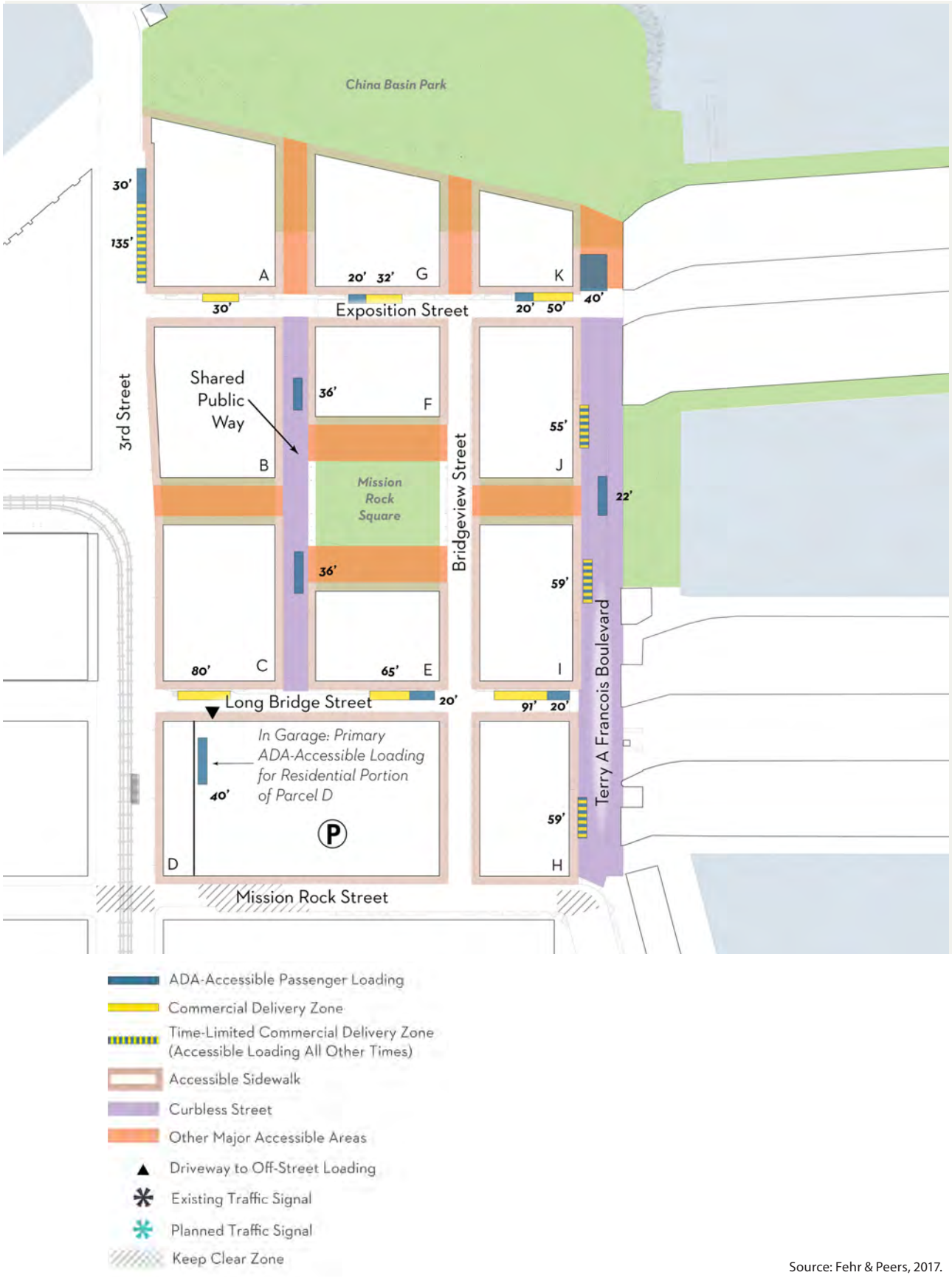
COMMERCIAL LOADING

The project would generate commercial loading activity, including goods deliveries to businesses and parcel deliveries to residents. The project would actively manage parcel deliveries and service vehicle loading through the following strategies:

- Encourage building servicing (e.g., trash pickup, maintenance) early in the morning or late at night, and
- No parking would be allowed in loading zones.

Figure 4.E-8, on the next page, shows the loading zone areas. Exposition Street and Long Bridge Street would have 24-hour commercial loading zones. The east side of Third Street and the west side of Terry A. Francois Boulevard would be available for parcel deliveries in designated areas. A total of 650 linear feet of on-street curb space would be designated for commercial loading on the above-noted streets for Seawall Lot 337 uses. If there are curb cuts for individual building driveways, this total of 650 linear feet of on-street curb space would be reduced. Commercial deliveries would occur on Pier 48 at designated locations that would accommodate five 75-foot vehicles.

Trash pickups would use the six commercial/parcel delivery spaces (i.e., yellow curb) on Exposition Street and Long Bridge Street to service all uses on the site (commercial, residential, and retail/restaurant). Trash pickups would occur on Pier 48 at designated locations. Most trash pickup activity is expected to happen on weekdays in the early morning hours, before the peak morning period for commute-related travel. A dedicated space would be provided in each building for garbage storage and recycling to avoid the use of commercial loading areas and public rights-of-way. The garbage storage and recycling space would be clearly accessible from either a driveway or a clear access path to/from an adjacent loading zone.



Source: Fehr & Peers, 2017.

Graphics ... 00836.13 (4-20-17)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.E-8
Proposed Project Loading Diagram

PASSENGER LOADING

ADA-compliant accessible passenger loading spaces would be provided on the east side of Third Street, the east side of the Shared Public Way, the east side of Terry A. Francois Boulevard, the north side of Exposition Street, the north side of Long Bridge Street, and inside the Block D2 parking garage. During weekday daytime business hours, commercial loading zones would be provided on the west side of Terry A. Francois Boulevard and the east side of Third Street. Outside of these hours (e.g., during evenings and on weekends), the commercial loading zones would be converted to passenger loading zones.

EMERGENCY VEHICLE ACCESS

All project streets would be designed to provide appropriate clearance for emergency vehicles such as large fire trucks. Intersections would be designed to accommodate the turning needs of such vehicles. The site's street grid would allow emergency access to all site buildings. Streets that would be closed to general vehicle traffic would be accessible to emergency vehicles.

EVENT TRANSPORTATION MANAGEMENT

The Mission Rock Transportation Plan (Chapter 5) includes an event management approach for a primary event at AT&T Park (40,000+ attendees), a secondary event at AT&T Park (15,000 to 25,000 attendees), and onsite events (2,000 to 5,000 attendees). The approach to managing pedestrian activity, vehicle flow, and bicycle parking is outlined in the document. Key strategies include the designation of pedestrian priority routes; pricing for event parking; vehicle circulation restrictions for onsite streets, including closure of the Shared Public Way, the primary north–south pedestrian route between the main garage and AT&T Park, to vehicle traffic; bicycle valet parking facilities; Parking Control Officers (PCOs) to manage heavy traffic flows; and drop-off and pickup locations for people with mobility limitations as well as taxi and shared-ride drivers.

PEDESTRIAN CHANGES

The project street network would include several elements that relate to pedestrians. The Blue Greenway is a multi-use trail that would be extended through the site near the waterfront, in the expanded China Basin Park, and on the east side of Terry A. Francois Boulevard to Mission Rock Street. Shared streets, with a curbless design so that all modes mix across the entire street cross section, would be the backbone of north–south pedestrian circulation on Terry A. Francois Boulevard and the Shared Public Way. The shared street would follow the street design approaches along key walking corridors and streets, per Better Streets Plan standards. Visual and tactile cues (e.g., changes in the color or texture of pavers, bollards, street furniture, light fixtures, plantings, tactile warning strips) would differentiate between areas that would be dedicated to pedestrian movement and areas that would be shared by pedestrians, bicycles, and vehicles.

The proposed project includes sidewalk network and traffic control devices, such as multi-way stop controls at intersections. The project proposes several new internal streets, including pedestrian paseos that restrict nonemergency vehicle access, and a Shared Public Way that prioritizes safe pedestrian movement. Twelve- to 15-foot-wide sidewalks are proposed throughout the project site, including new internal streets and the existing streets on the project perimeter. The proposed sidewalk network would comply with City standards for sidewalks on residential streets, per the San Francisco Better Streets Plan. All new sidewalks would include new landscaping on all streets. Street and sidewalk changes would be constructed in phases that would serve the associated development or open space.

Specifically, the proposed project includes construction of new 12-foot-wide sidewalks along the east side of Third Street and the north side of Mission Rock Street as well as on both sides of Exposition Street, Long Bridge Street, and Bridgeview Street internal to the project site. Pedestrian changes to Terry A. Francois Boulevard would include a 6-foot-wide pedestrian throughway on the west side of the right-of-way and a minimum 16-foot-wide Blue Greenway on the east side. Several east-west pedestrian paths would be provided within the China Basin Park, connecting north-south streets within the project site to the waterfront and the Lefty O'Doul Bridge.

A north–south Shared Public Way, located one block east of Third Street between the proposed Exposition Street and Long Bridge Street, would give priority to pedestrians over automobiles. The street would be at grade with no curbs or gutters. The shared street would follow the street design approaches along key walking corridors and streets, per Better Streets Plan standards. Visual and tactile cues (e.g., changes in the color or texture of pavers, bollards, street furniture, light fixtures, plantings, tactile warning strips) would differentiate between areas that would be dedicated to pedestrian movement and areas that would be shared by pedestrians, bicycles, and vehicles. Vehicles would access the shared street by curb cuts similar to a typical driveway. During major public events, the Shared Public Way would be closed to vehicles, with the exception of emergency vehicles.

The project proposes to construct a new signal-controlled intersection on Third Street at Exposition Street and a new side-street stop-controlled intersection at Long Bridge Street. The existing traffic signal at Third Street and Terry A. Francois Boulevard would be retained as a pedestrian crossing and draw bridge control. The project's other access points along Third Street would include the existing signalized intersections at Channel Street and Mission Rock Street. All intersections would comply with City design standards.

Raised intersections would be provided at several locations. High visibility crosswalks and directional ramps would be provided at intersections along Terry A. Francois Boulevard, Mission Rock Street, and all other internal intersections.

TRANSIT CHANGES

The overall transit network that would serve the proposed project is shown in Figure 4.E-3, on page 4.E-15. No changes to the public transit system are proposed as part of the proposed project.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

The proposed project includes a TDM Program that provides a strategy to manage the transportation demands created by the project. Monitoring and other applicable requirements for the TDM Program are specified in Section 4.G, *Air Quality*, in Mitigation Measure M-AQ-2c.

METHODS FOR ANALYSIS

The section presents the analysis methodologies, the approach to developing the travel demand forecasts for the two land use assumptions, and the cumulative 2040 conditions, including reasonably foreseeable development projects and transportation improvements.

ANALYSIS METHODOLOGY

This section presents the methodology for analyzing transportation impacts and information considered in developing travel demand for the proposed project. The impacts of the proposed project on the surrounding roadways were analyzed using the guidelines set forth in the SF Guidelines and Planning Commission Resolution 19579, and supporting materials, which provide direction for analyzing transportation conditions and identifying the transportation impacts of a proposed project in San Francisco.

The analysis of the proposed project impacts was conducted by comparing the baseline conditions described above under the *Baseline Conditions* discussion, to conditions under full buildout of each of the land use assumptions. For the cumulative analysis, future year 2040 cumulative conditions are compared to project buildout conditions for each of the land use assumptions. The analysis comparing baseline conditions to project conditions assesses the near-term effects of the two land use assumptions, while the analysis comparing 2040 cumulative conditions to project conditions assesses the long-term effects in combination with other known and forecast development. The year 2040 was selected because it is the latest year that travel demand forecasts are available from the SFCTA travel demand forecasting model, SF-CHAMP.

PUBLIC RESOURCES CODE SECTION 21099 (SB 743)

In 2013, SB 743 added Section 21099 to CEQA. CEQA Section 21099(b)(1) requires OPR to develop revisions to the CEQA Guidelines and establish criteria for determining the significance of project transportation impacts within transit priority areas that promote "a reduction in greenhouse gas emissions, development of multimodal transportation networks,

and a diversity of land uses." Potential metrics OPR may recommend to measure transportation impacts include VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. CEQA Section 21099(b)(2) states that upon certification of the revised CEQA Guidelines for determining transportation impacts pursuant to Section 21099(b)(1), automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. Section 21099(c) provides that OPR also may adopt guidelines with alternative metrics for traffic LOS impacts that apply outside transit priority areas.

OPR is currently in the process of updating its CEQA Guidelines to implement these provisions. As part of this process, in January 2016, OPR published *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*[24] ("proposed transportation impact guidelines") for public review and comment, recommending that transportation impacts for projects be measured using VMT as the primary metric. VMT measures the distance that a project might cause people to drive and accounts for the number of passengers within a vehicle.

On March 3, 2016, the San Francisco Planning Commission, by Resolution No. 19579, adopted VMT as the principal criterion for determining transportation impacts.

- The Planning Commission found that OPR's proposed transportation impact guidelines, as described in the OPR technical advisory,[25] provide substantial evidence that VMT is an appropriate standard to use in analyzing transportation impacts on protect environmental quality and a better indicator of GHG, air quality, and energy impacts than automobile delay;
- Under the Planning Commission's resolution, automobile delay, as measured solely by LOS or similar measure of vehicular capacity or traffic congestion, will 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;
- The Planning Commission directed the Environmental Review Officer to remove automobile delay as a factor in determining significant impacts pursuant to 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; and

[24] This document is available online at: https://www.opr.ca.gov/s_sb743.php.

[25] Governor's Office of Planning and Research. 2016. Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA: Implementing Senate Bill 743 (Steinberg 2013). January 20.

- The Planning Commission directed the Environmental Planning Division and Environmental Review Officer to replace automobile delay with VMT criteria that promote a reduction in GHG emissions, development of multimodal transportation networks, and a diversity of land uses that are consistent with proposed and forthcoming changes to the CEQA Guidelines by OPR.
- In connection with the adoption of Planning Commission Resolution No. 19579, adopting VMT to measure transportation impacts, for localized circulation impact analysis (e.g., potential impacts on people while walking, bicycling, riding transit; freight and passenger loading; emergency vehicle access; construction site circulation and access; compliance with local plans, ordinances, and policies related to transportation), the Planning Department continues to use trip generation rates and trip distribution identified in the SF Guidelines. [26]

Planning Commission Resolution No. 19579 became effective immediately for all projects that have not received a CEQA determination and all projects that have previously received CEQA determinations, but require additional environmental analysis. Accordingly, this EIR contains a focused discussion of whether the addition of project vehicle trips may affect bicycle or pedestrian safety, transit operations, or emergency and private vehicle access, including access to the UCSF emergency room in Mission Bay.

The assessment of potential impacts on transit operations focuses on whether queues from the project parking garages would extend back to Third Street and affect operations of the T Third line. The assessment of potential impacts on the bicycle and pedestrian network focuses on whether vehicle queues, particularly those from the project's parking garages, would affect pedestrians and cyclists at intersections and garage access points. 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.

It should be noted that prior to the Planning Commission's action on March 3, 2016, some projects, including the proposed project, were in the process of environmental review and had substantively completed Transportation Impact Studies using the methodology and LOS CEQA significance criteria formerly used by the SF Guidelines. The TIS, included as Appendix 4-1 to this EIR, has been updated to reflect the shift to VMT and the removal of automobile delay as a significance criterion. However, Section 7 of the TIS includes a discussion of LOS conditions, including intersections that are estimated to operate at or beyond automobile capacity under project and cumulative conditions, and improvement measures to address such effects under those conditions.

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[26] San Francisco Planning Department. 2016. *Executive Summary: Resolution Modifying Transportation Impact Analysis, Hearing Date: March 3, 2016*. Attachment E: Screening Criteria for Circulation Analysis and Methodology for Travel Demand, and Attachment F: Methodologies, Significance Criteria, Thresholds of Significance, and Screening Criteria for Vehicle Miles Traveled and Induced Automobile Travel Impacts, including an appendix from the San Francisco County Transportation Authority.

Although no longer part of the CEQA transportation impacts assessment, localized congestion conditions are described in the TIS to inform transportation improvement projects proposed/agreed to by the applicant and help inform related topics such as air quality and noise.[27]

VEHICLE MILES TRAVELED ANALYSIS

As noted above, the Planning Commission's Resolution No. 19579 is consistent with the direction of CEQA Section 21099(b)(2) and the updated CEQA Guidelines. Moreover, it is based on and consistent with the authority and deference CEQA provides to local agencies to identify the methodology to analyze an environmental impact.[28] Residential and office projects located in areas with low VMT that incorporate similar features (i.e., sufficient density, mix of uses, transit accessibility) will tend to exhibit similarly low VMT. OPR's Technical Advisory recognizes that there are various methods for assessing VMT and specifically acknowledges the efficacy of a map-based screening approach. The City uses this approach.

San Francisco, and other lead agencies, such as Oakland and Pasadena, use maps to illustrate areas that exhibit below-threshold VMT to screen out projects that may not require a detailed VMT analysis. Under this approach, travel demand models or survey data provide the existing residential or office VMT, which can be modified for mixed-use projects, by using each use-based map as a screen for the respective use portion of the project to then develop maps that illustrate VMT for different areas in the city. Thus, the maps demonstrate whether a proposed project is in a transportation-efficient location (e.g., transit-oriented infill) with safe and adequate access to multimodal transportation systems and key destinations that will help the City, region and state reach their GHG reduction targets under Assembly Bill (AB) 32.

This mapping approach for VMT screening has also been recently acknowledged in the California Department of Transportation (Caltrans) Local Development Intergovernmental Review Program, Interim Guidance, approved September 2, 2016. The Caltrans guidance provides further support for use of a map-based screening approach. The interim Caltrans guidance replaces Caltrans' 2002 guidance and is part of Caltrans' effort to support smart growth and efficient development. It is intended to ensure that GHG emissions reductions, good community design, improved proximity to key destinations, and a safe multimodal transportation system are all integral parts of the land use decision-making process.

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[27] See, for example, California Department of Transportation. 2016. *Local Development – Intergovernmental Review Program Interim Guidance: Implementing Caltrans Strategic Management Plan 2015–2020 Consistent with SB 743 (Steinberg 2013)*. Approved September 2. Appendix D, p. 2 ("increased traffic volumes from high-VMT development and/or high speeds can exacerbate safety concerns . . . that may affect adjacent pedestrian facilities. Similarly, increasing traffic volumes at uncontrolled turn-movement points or in locations without adequate modal separation/refuge can increase the vulnerability for all modes, especially pedestrians and bicyclists").

[28] California Public Resources Code Section 21099(b)(1); California Code of Regulations., Title 14, Section 15064(b).

The SFCTA uses SF-CHAMP to estimate VMT by private automobiles and taxis for different land use types within individual TAZs. Travel behavior in SF-CHAMP is calibrated by SFCTA, 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. SF-CHAMP 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 SFCTA uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not only trips to and from the project. For retail uses, the SFCTA uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). Trip-based analyses use individual person-trips from one origin to one destination as the unit of analysis, such as from home to work. A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects 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.[29]

The following identifies thresholds of significance and screening criteria used to determine if a land use project or plan would result in significant impacts under the VMT metric. The recommended VMT thresholds identified in the aforementioned OPR technical advisory vary by land use type (i.e., residential, office, retail projects). The recommended threshold metrics in the technical advisory are VMT per capita for residential projects and VMT per employee for office projects. A project's impact on VMT is considered significant if it exceeds regional VMT per capita or employee minus 15 percent, as described in more detail below.

For residential projects, a project would generate substantial additional VMT if it exceeds the regional household VMT per capita minus 15 percent. This metric is consistent with OPR's proposed transportation impact guidelines, which state that a project would cause substantial additional VMT if it were to exceed both existing city household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent.

For office projects, a project would generate substantial additional VMT if it exceeds the regional VMT per employee minus 15 percent.

For active/retail projects, the Planning Department uses a VMT efficiency approach (i.e., a project would generate substantial additional VMT if it exceeds the regional VMT per retail employee minus 15 percent).

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

For mixed-use projects, each proposed land use is evaluated independently, per the significance criteria described above. The effect of the Mission Rock project on daily VMT per capita is reviewed separately for the proposed project's residential, office and retail uses based on data from the SF-CHAMP model provided by SFCTA.

This approach is consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* ("proposed transportation impact guidelines"). OPR described a threshold of 15 percent below existing development as being "both reasonably ambitious and generally achievable" for the following reasons.[30]

First, Section 21099/SB 743 states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions." SB 743 also states the legislature's intent that the analysis of transportation in CEQA better promote the state's goals of reducing GHG emissions. It cites in particular the reduction goals in the Global Warming Solutions Act and the Sustainable Communities and Climate Protection Act, both of which call for substantial reductions. The California Air Resources Board (CARB) established long-term reduction targets for the largest regions in the state, ranging from 13 to 16 percent. Second, Caltrans has developed a statewide VMT reduction target in its Strategic Management Plan. Specifically, it calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020. Third, according to the California Air Pollution Control Officers Association (CAPCOA), 15 percent reductions in VMT are typically achievable at the project level in a variety of place types.[31] Fourth, the *First Update to the AB 32 Scoping Plan* states that "[r]ecognizing the important role local governments play in the successful implementation of AB 32, the initial Scoping Plan called for local governments to set municipal and communitywide GHG reduction targets of 15 percent below then-current levels by 2020, to coincide with the statewide limit."[32]

The VMT significance standards, and a comparison of these standards to TAZ 655, which is where the project site is located, are summarized in Table 4.E-14, below. Table 4.E-14 provides a comparison of regional average, regional average minus 15 percent, and TAZ 655 VMT.

TABLE 4.E-14. EXISTING DAILY VEHICLE MILES TRAVELED

	Bay Area VMT		
Land Use	**Regional Average**	**Regional Average minus 15%**	**TAZ 655**
Households (Residential)	17.2	14.6	3.5
Employment (Office)	19.1	16.2	12.1
Visitors (Retail)	14.9	12.6	10.4

30 This document is available online at: https://www.opr.ca.gov/s_sb743.php, page III:20.

31 CAPCOA, *Quantifying Greenhouse Gas Measures*, 2010, p. 55.

32 *First Update to the AB 32 Scoping Plan*, p. 113.

In addition to the map-based VMT screening criterion, OPR has a "proximity to transit stations" screening criterion that the City uses. OPR recommends that residential, active/retail, and office projects, as well projects with 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 result in a substantial increase in VMT. 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.[33]

OPR's proposed transportation impact guidelines do not provide screening criteria or thresholds of significance for other types of land uses, other than those projects that meet the definition of a small project, which is not applicable to the project. Therefore, the Planning Department provides additional screening criteria and thresholds of significance to determine if land uses similar in function to residential, office, and active/retail would generate a substantial increase in VMT.

The Planning Department applies the Map-Based Screening and Proximity to Transit Station screening criteria[34] to the following land use types:

- Tourist Hotels, Student Housing, Single Room Occupancy Hotels, and Group Housing – Trips associated with these land uses typically function similarly to multi-family residential uses and generate a comparable number of vehicle trips. Therefore, these land uses are treated as residential for screening and analysis.
- Childcare, K-12 Schools, Medical, Post-Secondary Institutional (nonstudent housing), and Production, Distribution, and Repair (PDR) – Trips associated with these land uses typically function similarly to office. Although some uses may have some visitor/customer trips associated with them (e.g., childcare and school drop-off, patient visits, etc.), those trips are often a side trip within a larger tour. For example, the visitor/customer trips are influenced by the origin (e.g., home) and/or ultimate destination (e.g., work) of those tours. Therefore, these land uses are treated as office for screening and analysis.
- Grocery Stores, Local-Serving Entertainment Venues, Religious Institutions, Parks, and Athletic Clubs – Trips associated with these uses typically function similar to active/retail. Therefore, these types of land uses are treated as active/retail for screening and analysis.

[33] A project is considered to be inconsistent with the Sustainable Communities Strategy if development is located outside of areas contemplated for development in the Sustainable Communities Strategy.

[34] San Francisco Planning Department. 2016. *Executive Summary: Resolution Modifying Transportation Impact Analysis, Transportation Sustainability Program – Resolution Regarding Align Component.* Staff report for March 3, 2016, San Francisco Planning Commission hearing.

INDUCED AUTOMOBILE TRAVEL ANALYSIS

The proposed project is a mixed-use development project that includes an internal street network, bicycle and pedestrian facilities, traffic-calming measures, and intersection traffic control devices, including traffic signals and stop controls.

A proposed project would not result in a substantial increase in VMT if it would include the following components and features:

- Active Transportation, Rightsizing (aka Road Diet), and Transit Projects:
  - Infrastructure projects, including safety and accessibility improvements, for pedestrians and bicyclists.
  - Installation or reconfiguration of traffic-calming devices.
  - Creation of new or expansion of existing transit service.
  - Creation of new or addition of roadway capacity on local or collector streets, provided the project also substantially improves conditions for pedestrians, bicyclists, and, if applicable, users of public transit (e.g., by improving neighborhood connectivity or improving safety).
- Other Minor Transportation Projects:
  - Rehabilitation, maintenance, replacement, and repair projects designed to improve the condition of existing transportation assets (e.g., highways, roadways, bridges, culverts, tunnels, transit systems, and bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity.
  - Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or emergency breakdown lanes that are not used as through lanes.
  - Installation, removal, or reconfiguration of traffic control devices, including transit signal priority features.
  - Timing of signals to optimize vehicle, bicycle, or pedestrian flow on local or collector streets.
  - Addition of transportation wayfinding signage.
  - Removal of off- or on-street parking spaces.
  - Adoption, removal, or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs).

TRANSIT ANALYSIS

The transit analysis considers whether the addition of project vehicle trips would have an impact on the transit system. The assessment of potential impacts on transit operations focuses on whether queues from the project parking garages would extend back to Third Street and affect operations of the T Third line.

The impact of additional transit ridership generated by the proposed project on local and regional transit providers was assessed using screenlines and the project cordon analysis. The concept of screenlines is used to describe the magnitude of travel to or from the greater downtown area of San Francisco and to compare estimated transit volumes to available capacities. Screenlines are hypothetical lines that would be crossed by persons traveling between downtown San Francisco and its vicinity (Super District 1) to or from other parts of San Francisco and the region (Super Districts 2, 3, and 4). Super Districts 1 through 4 are shown in Figure 4.E-4, on page 4.E-16. Four screenlines have been established in downtown San Francisco to analyze potential impacts of projects on Muni service: northeast, northwest, southwest, and southeast, with subcorridors within each screenline. The bus routes and light rail lines used in this screenline analysis, as listed in Table 4.E-6, on page 4.E-21, are considered the major commute routes to and from the downtown area. Other bus routes, such as those with greater than 10-minute headways, are not included due to their generally lower ridership. Three regional screenlines have been established around San Francisco to analyze impacts on the regional transit agencies: North Bay, East Bay, and Peninsula and South Bay. Both sets of screenlines focus on transit trips into downtown San Francisco in the morning (inbound) and out of downtown in the evening (outbound), because these routes transport passengers in the most congested directions and at the most congested commute times. In addition, impacts on local Muni transit service were assessed by comparing the projected ridership from each of the land use assumptions with the available transit capacity at the MLP of various transit corridors, described above in the subsection on *Existing Conditions* under the *Transit Facilities* discussion. Capacity utilization for a.m./p.m. peak periods was determined at the MLP for each route serving the study area. As explained in the *Muni* subsection under *Existing Conditions*, the MLP for Muni routes is not located in the study area but is located closer to downtown. Capacity utilization relates the number of passengers per transit vehicle to the design capacity of the vehicle.[35] Muni has established a capacity utilization standard of 85 percent, which was applied to the a.m. and p.m. weekday conditions analyzed.

[35] The capacity per vehicle includes both seated and standing capacity, where standing capacity is between 30 and 80 percent of seated capacity (depending upon the specific transit vehicle configuration). The capacity of a light rail vehicle is 119 passengers; the capacity of a historic streetcar is 70 passengers; and the capacity of a standard bus is 63 passengers.

The existing ridership data for the routes providing direct access to the project site were analyzed based on each route's peak capacity utilization at its MLP, obtained from the SFMTA's automated passenger count database in September/October 2013. The baseline was then calculated using information about the development projects expected to be completed by the time the proposed project is undertaken. The transit baseline conditions reflect Muni capacity that is expected to be available when the Central Subway project is completed and the T Third short line loop has been constructed to provide additional capacity during a.m./p.m. peak periods.

Future 2040 cumulative transit ridership projections were developed based on transit growth projections prepared for the Transit Effectiveness Project. Forecast future hourly ridership demand was then compared to expected capacity based on the likely route and headway changes identified in the Muni Forward program to estimate capacity utilization under 2040 cumulative conditions. The transit person-trips forecast to be generated by the proposed project were compared with the 2040 cumulative conditions at the screenlines and on specific Muni routes serving the project site.

The proposed project was determined to have a significant transit impact if project-generated transit trips would cause screenlines operating at less than the capacity utilization standard under baseline conditions to operate at more than the capacity utilization standard. The proposed project would also have a significant impact if project-generated transit trips would add more than 5 percent to a screenline or an individual within a screenline route that already exceeds the capacity utilization standard under baseline conditions.

The proposed project would have a significant cumulative impact if the addition of project trips to a Muni screenline or individual route would cause capacity utilization to exceed the 85 percent standard or would add more than 5 percent to a screenline or an individual route that would exceed the capacity utilization standard under cumulative conditions without the proposed project.

PEDESTRIAN ANALYSIS

The pedestrian analysis considers whether the addition of project vehicle trips would have an impact on the pedestrian network. The assessment of potential safety impacts on the pedestrian network focuses on whether vehicle queues generated by project vehicle trips when accessing the project's parking garages would affect pedestrians at intersections and garage access points.

Pedestrian trips generated by the proposed project include walking trips to and from nearby land uses and to and from the local transit stops and the Fourth and King Streets Caltrain station. A qualitative assessment of pedestrian conditions was conducted to determine whether pedestrian facilities would be adequate to accommodate pedestrian trips, whether the project would interfere with pedestrian accessibility, and whether any conditions hazardous to pedestrians would be created. No quantitative analysis was performed.

BICYCLE ANALYSIS

The bicycle analysis considers whether the addition of project vehicle trips would have an impact on the bicycle network. The assessment of potential safety impacts on the bicycle network focuses on whether vehicle queues generated by project vehicle trips when accessing the project's parking garages would affect cyclists at intersections and garage access points.

The transportation analysis includes a qualitative assessment of bicycle conditions as they relate to the project site and bicycle parking, and to bicycle circulation in the study area. No quantitative analysis was performed. The analysis discusses bicycle safety and potential conflicts with traffic. The proposed project would result in a significant impact if it would adversely affect bicycle facilities in the study area, whether the project would interfere with bicycle accessibility to the site and adjoining areas, or would create new hazardous conditions for bicycling.

LOADING ANALYSIS

The analysis of loading conditions includes quantification of loading demand during the peak hour of loading activities and a comparison of that demand to proposed on- and off-street loading facilities located within the project site. The proposed project would have a significant impact if it would result in a loading demand that could not be accommodated within proposed facilities such that potentially hazardous conditions for pedestrians or bicycles were created or substantial transit delay would occur.

EMERGENCY ACCESS

The qualitative discussion of emergency access addresses access to the project site and access for emergency vehicles within the planned circulation pattern.

CONSTRUCTION ANALYSIS

The construction impact evaluation addresses temporary construction-related traffic from construction workers and materials delivery and its potential to result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, thereby resulting in potential hazardous conditions.

PARKING ANALYSIS

The parking analysis quantifies the proposed project's parking demand under the High Residential Assumption and the High Commercial Assumption in relation to the proposed parking supply. The parking demand for the proposed project at Seawall Lot 337 and Pier 48 does not reflect the proposed project's parking management and pricing approach.

TRAVEL DEMAND ANALYSIS

Travel demand refers to the new vehicle, transit, bicycle, and pedestrian traffic that would be generated by the proposed project. The travel demand data relate to localized impacts, not regional metrics such as VMT. Evaluating the travel data is necessary to address potential local effects on transit, bicycle, pedestrian, and loading facilities.

Forecasts of travel demand from the land use assumptions are presented in detail in a Travel Demand Memorandum, which is summarized below.[36] The forecasts are based on methodology in the SF Guidelines and supplemented with information that accounts for the large-scale and mixed-use qualities of the proposed project. Trip generation and mode choice for the open space included in the proposed project were not included in the Travel Demand Memorandum. Therefore, travel demand for the open space is presented in detail here.

TRIP GENERATION

The first step in calculating travel demand is to determine the person-trip generation rate. Internal capture rates and mode splits are then applied to the person-trip generation rate.

The person-trip generation estimates for the two land use assumptions include residents, employees, and visitors to the proposed development. The weekday daily and p.m. peak-hour person-trip generation for the proposed project uses are based on the appropriate rates in Table C-1 of the SF Guidelines, except for the open space use, which was calculated based on trip rates contained in *Traffic Generators*,[37] published by the San Diego Association of Governments (SANDAG). Trip generation was also estimated for the weekday a.m. peak hour, based on rates developed for this study and adapted information from the Institute of Transportation Engineers,[38] in combination with the SF Guidelines. The proposed project includes open space elements that would accommodate special events, ranging from a few hundred people a few times per month to up to 5,000 people approximately four times per year. Because these events are relatively infrequent and unlikely to occur during the typical weekday a.m./p.m. peak periods, they are not included in the travel demand calculations. However, the standard TDM measures, which are part of the proposed project's TDM Program, would remain in place during events and serve to reduce the amount of vehicular travel. Additionally, events may require applicable permits from the Port and, in some cases, the City. As part of the permitting process, the event sponsor must include a plan for managing travel to minimize the effect on surrounding neighborhoods. These management strategies may include special event shuttles, promotion of transit services, and parking management, such as valet parking.

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[36] *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand.* Adavant Consulting. June 30, 2015. This document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0208E.

[37] *Traffic Generators*, Regional Park Land Use, San Diego Association of Governments, 2002.

[38] *Trip Generation Report*, 9th edition, Institute of Transportation Engineers, 2012.

Table 4.E-15, on the next page, presents the weekday daily, a.m. peak-hour, and p.m. peak-hour person-trip generation forecasts (internal and external) for the land use assumptions. The table presents trips that would occur within the project site (internal trips) and person-trips that would begin or end outside of the project site (external trips).

The High Residential Assumption would generate 95,276 total daily person-trips on a typical weekday, 7,819 person-trips in the a.m. peak hour, and 11,696 person-trips during the weekday p.m. peak hour (including both trips internal to the project site and external trips to or from locations outside of the project site).

The High Commercial Assumption would generate 97,886 total daily person-trips on a typical weekday, 7,751 person-trips in the a.m. peak hour, and 11,482 person-trips during the weekday p.m. peak hour (including both trips internal to the project site and external trips to or from locations outside of the project site).

The SF Guidelines do not provide a specific methodology for assessing the number of trips that could remain within a large, mixed-use project site and, therefore, would be "double counted" with a literal application of the SF Guidelines trip generation methodology. Using sources such as the National Cooperative Highway Research Program[39] and *ITE Journal* (ITE) [40] as initial points of analysis, the analysis identified expected internal trip capture rates.

Similarly, the SF Guidelines do not provide for a methodology for estimating the number of "linked" trips - those trips that are made as intermediate stops on the way from an origin to a primary destination. Therefore, refinements to the standard travel demand analysis approach were made to account for the size and land use mix of the two land use assumptions, with their large proposed mixes of residential, active/retail, and office uses.

Table 4.E-16, on page 4.E-84, presents the weekday daily, a.m. peak-hour, and p.m. peak-hour person-trip generation forecasts (internal) for the project. Internalization is dependent on the quantity and mix of uses as well as the varying levels of activity they generate at various times of the day; as a result, the internalization percentage is different for each land use assumption and the a.m./p.m. peak periods. The High Residential Assumption is estimated to generate a larger proportion and larger numbers of internal trips than would the High Commercial Assumption on a daily basis and in the a.m./p.m. peak periods. The internalization ratios selected were within the range of published observed internalization for various land uses published by the National Cooperative Highway Research Program and ITE, and are described more fully in the Travel Demand Memorandum referenced previously.

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[39] *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. National Cooperative Highway Research Program Report 684, 2011. Transportation Research Board.

[40] *Improved Estimation of Internal Trip Capture for Mixed-Use Development*. ITE Journal. August 2010; *Alternative Approaches to Estimating Internal Traffic Capture of Mixed-Use Project*. ITE Journal. November 2011.

TABLE 4.E-15. PERSON-TRIP GENERATION (INTERNAL AND EXTERNAL TRIPS)

	High Residential Assumption				High Commercial Assumption			
Land Use	**Size**	**Daily**	**A.M. Peak Hour**	**P.M. Peak Hour**	**Size**	**Daily[1]**	**A.M. Peak Hour**	**P.M. Peak Hour**
Residential	1,579 units	15,790	2,247	2,732	1,048 units	10,480	1,491	1,813
Retail	120,519 sf	18,078	421	1,627	122,388 sf	18,358	428	1,652
Office	972,175 sf	17,596	1,566	1,496	1,361,181 sf	24,637	2,193	2,094
Sit-down Restaurant	84,363 sf	16,873	246	2,278	85,672 sf	17,134	250	2,313
Quick-Serve Restaurant	36,156 sf	21,694	3,214	2,929	36,717 sf	22,030	3,264	2,974
China Basin Park	5.12 acres	102	13	9	5.12 acres	102	13	9
Brewery	190,500 sf	301	32	32	190,500 sf	301	32	32
Brewery Retail	11,000 sf	1,000	—	150	11,000 sf	1,000	-	150
Brewery Restaurant	11,000 sf	2,200	32	297	11,000 sf	2,200	32	297
Mezzanine Retail	10,000 sf	1,500	35	135	10,000 sf	1,500	35	135
Mezzanine Office	7,875 sf	143	13	12	7,875 sf	143	13	12
Total	—	**95,276**	**7,819**	**11,696**	—	**97,886**	**7,751**	**11,482**

Source: SF Guidelines, 2002; Adavant Consulting, 2015

Notes:

1. Lower-floor active/retail/production uses have been divided for purposes of analysis into the retail, sit-down restaurant, and quick-serve restaurant use rows above.

2. Trip generation rates for each land use is available in Appendix 4-3, Table 5.

TABLE 4.E-16. PERSON-TRIP GENERATION (EXTERNAL TRIPS ONLY)

	High Residential Assumption					High Commercial Assumption				
Land Use	**Size**	**Daily Trip Rate**	**Daily**	**A.M. Peak Hour**	**P.M. Peak Hour**	**Size**	**Daily Trip Rate**	**Daily**	**A.M. Peak Hour**	**P.M. Peak Hour**
Residential	1,579 units	1.80	10,264	1,798	1,776	1,048 units	1.74	6,498	1,193	997
Retail	120,519 sf	19.78	15,366	328	1,220	122,388 sf	20.74	16,522	385	1,322
Office	972,175 sf	3.15	15,837	1,331	1,122	1,361,181 sf	3.27	23,406	1,995	1,675
Sit-down Restaurant	84,363 sf	28.06	14,342	209	1,891	85,672 sf	29.06	15,421	233	2,036
Quick Service Restaurant	36,156 sf	82.97	18,006	2,571	2,196	36,717 sf	84.18	18,726	2,938	2,528
China Basin Park	5.12 acres	2.93	92	12	8	5.12 acres	2.93	92	12	8
Brewery	190,500 sf	0.67	286	30	30	190,500 sf	0.67	286	30	30
Brewery Retail	11,000 sf	13.73	1,000	—	150	11,000 sf	13.73	1,000	—	150
Brewery Restaurant	11,000 sf	27.64	1,980	32	267	11,000 sf	27.64	1,980	32	267
Mezzanine Retail	10,000 sf	20.70	1,350	35	122	10,000 sf	20.70	1,350	35	122
Mezzanine Office	7,875 sf	3.30	128	12	10	7,875 sf	3.30	135	12	10
Total	—	—	**78,650**	**6,358**	**8,791**	—	—	**85,416**	**6,864**	**9,145**

Source: SF Guidelines, 2002; Adavant Consulting, 2015

Notes:

1. Lower-floor active/retail/production uses have been divided for purposes of analysis into the retail, sit-down restaurant, and quick-serve restaurant use rows above.

TRIP DISTRIBUTION

The geographic distribution of project-generated trips was obtained from the SF Guidelines for retail and office uses and San Francisco Planning Department survey data for the South Beach, South Park, and Rincon Hill areas for residential trips. Distributions are based on the origin/destination of the trip and separated into the four quadrants of San Francisco (Super Districts 1 through 4) as well as the East Bay, North Bay, South Bay, and areas outside the region. The project site is in Super District 3, though it is less than 0.25 mile from the edge of Super District 1. Given the changing setting in the vicinity of the proposed project, Super District 3 data would not convey an accurate portrayal of the proposed project's travel characteristics, including its mode split and trip distribution.

Based on current and expected growth and infrastructure development, improved transit availability and increased density of development in the project vicinity is anticipated by the time the project is built out. It is reasonable to assume that travel behavior in the project vicinity would resemble the conditions that the SOMA, South Beach, or Rincon Hill neighborhoods, which are located in Super District 1, had at the time of preparation of the SF Guidelines. The trip distribution for office, residential, retail, and industrial uses was based on travel characteristics for Super District 1, given the proximity of the site to Super District 1 as well as planned transit, bicycle, and pedestrian infrastructure improvements in areas surrounding the project site in SOMA and Mission Bay.

The geographic distribution of project-generated residential trips was obtained from the *2009-2013 American Community Survey 5-Year Estimate for Census Tract 226,*[41] which corresponds to the project site, supplemented with information from the 1990 and 2000 U.S. Census. The trip distribution for office, industrial, restaurant, and retail uses was obtained from the SF Guidelines for land uses within Super District 3, which is where the project site is located. Distributions are based on the origin/destination of the trip and separated into the four quadrants of San Francisco (Super Districts 1 through 4, as shown in Figure 4.E-4, on page 4.E-20) as well as the East Bay, North Bay, South Bay, and areas outside the region.

As shown in Table 4.E-17, on the next page, the majority of the project-generated trips would be within San Francisco, with the greatest proportion of residential trips related to Super District 1, the northeast quadrant, and the greatest proportion of worker trips related to Super District 3, the southeast quadrant. Worker trips to and from locations outside of San Francisco are nearly evenly divided between the East Bay and the Peninsula/South Bay. Visitor trips to and from the commercial uses would also be primarily within San Francisco, with the largest proportion traveling within Super District 3. A substantial number of visitor trips from

[41] American Community Survey, 2009–2013 5-year Summary, U.S. Census Bureau.

TABLE 4.E-17. TRIP DISTRIBUTION

Place of Trip End	Residential Trips	Retail/Restaurant/ Brewery Trips		Office Trips	
		Workers	Visitors	Workers	Visitors
San Francisco	69.5%	55.4%	56.0%	55.4%	37.0%
Super District 1 (Northeast Quadrant)	34.7%	12.8%	22.0%	12.8%	19.0%
Super District 2 (Northwest Quadrant)	3.5%	14.4%	14.0%	14.4%	7.0%
Super District 3 (Southeast Quadrant)	27.8%	17.0%	13.0%	17.0%	8.0%
Super District 4 (Southwest Quadrant)	3.5%	11.2%	7.0%	11.2%	3.0%
East Bay	8.8%	22.4%	11.0%	22.4%	11.0%
North Bay	<1%	6.1%	5.0%	6.1%	5.0%
South Bay	21.0%	14.3%	7.0%	14.3%	8.0%
Out of Region	<1%	1.8%	21.0%	1.8%	39.0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Source: 2008 SF Planning Department Survey; SF Guidelines Appendix E Tables E-3, E-10, and E-11; Adavant, 2015

outside San Francisco would be to and from outside the region (approximately 12 percent of office/industrial/restaurant trips and 22 percent of retail trips). These patterns were used as the basis for assigning project-generated transit trips to individual transit lines for both land use assumptions.

TRAVEL MODES

The project-generated person-trips were assigned to travel modes to determine the number of auto, transit, and other trips. The Auto category includes those arriving at the site by private automobile and carpool, while the Transit category includes those arriving to the site by means of public transportation. The Other category includes walking and use of bicycles, motorcycles, taxis (including transportation network companies such as Uber and Lyft), and other modes. Typically, the Other category represents a relatively small portion of trips because most trips are made by auto or transit. However, because of the mixed-use nature of this project, the Other category also includes all internal trips, which, because of their short nature, are also presumed to be made by walking or bicycling. Thus, the Other category represents a relatively larger portion of all the trips generated by this project than would normally be forecast for smaller, single-use projects.

Mode-split information for the residential portion of the project was based on San Francisco Planning Department survey data for residents of the South Beach, South Park, and Rincon Hill areas. Mode-split data for retail, restaurant, industrial (specifically analyzed as a proposed brewery use), and office uses were obtained from the SF Guidelines. Additional detail and breakdown of trips by all modes is presented in the Travel Demand Memorandum (Appendix 4-4).

Mode split information for the residential portion of each land use assumption was based on data obtained from the U.S. Census, using data from Census Tract 607, in which the project site is located. Mode of travel assumptions for the office, retail, industrial, and restaurant uses were obtained from the SF Guidelines for employee and visitor trips using an average of Super District 1 and Super District 3. Adjustments were made to account for internal trips.

Table 4.E-18, on the next page, and Table 4.E-19, on page 4.E-89, provide a breakdown of the a.m. peak-hour and p.m. peak-hour external person-trips by mode of travel for the High Residential Assumption and the High Commercial Assumption. Each table also shows a breakdown of external vehicle trips for each land use assumption. The number of trips shown in the "Auto" columns under "Person-Trips" reflects the total number of persons traveling by automobile, not the total number of vehicle trips, because some vehicles would transport more than one person; each person is considered a person-trip.

The number of external daily vehicle trips on a typical weekday would be 14,483 for the High Residential Assumption and 15,230 for the High Commercial Assumption. The number of peak-hour vehicle trips generated by each scenario is shown in the columns on the right side of Table 4.E-18, on the next page, and Table 4.E-19, on page 4.E-89,. The High Residential Assumption would generate 1,396 vehicle trips during the a.m. peak hour on a typical weekday and 1,758 vehicle trips during the p.m. peak hour on a typical weekday. The High Commercial Assumption would generate 1,449 vehicle trips during the a.m. peak hour on a typical weekday and 1,755 vehicle trips during the p.m. peak hour on a typical weekday. The High Commercial Assumption, which has more office uses than the High Residential Assumption, has more inbound vehicle trips during the a.m. peak hour and more outbound vehicle trips during the p.m. peak hour. Conversely, the High Residential Assumption, which has more housing than the High Commercial Assumption, has more outbound vehicle trips during the a.m. peak hour and more inbound trips during the p.m. peak hour than the High Commercial Assumption.

FREIGHT DELIVERY AND SERVICE VEHICLE DEMAND

The delivery/service vehicle demand forecasts for the land use assumptions use the methodology and truck-trip generation rates presented in the SF Guidelines, with the exception of the brewery uses on Pier 48. Truck count data were collected at the existing Anchor Brewery facility in San Francisco[42] and adjusted to reflect the proposed brewery facility on Pier 48 because the SF Guidelines do not provide truck trip generation rates for brewery uses. Delivery/service vehicle demand is based on the types of land uses and the amount. Delivery/service vehicles include delivery vans; cars; pickups; small delivery trucks, such as mail trucks or step vans; large delivery trucks, including garbage trucks; and tractor-trailers.

[42] Adavant Consulting. *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand – Updated Project Definition*. June 30, 2015, Appendix B.

TABLE 4.E-18. PROPOSED PROJECT EXTERNAL TRIP GENERATION BY MODE – A.M. PEAK HOUR

	External Person-Trips				External Vehicle Trips		
Land Use	**Auto**	**Transit**	**Other1**	**Total**	**Total**	**In**	**Out**
High Residential Assumption							
Residential	516	769	512	1,798	466	155	311
Office	537	641	153	1,331	322	304	18
Retail	137	175	16	328	86	86	—
Sit-down Restaurant	85	110	14	209	54	54	—
Quick Service Restaurant	1,008	699	864	2,571	435	232	203
China Basin Park	4	3	4	12	2	1	1
Brewery	14	14	2	30	11	7	3
Brewery Retail	—	—	—	—	—	—	—
Brewery Restaurant	12	17	3	32	8	8	—
Mezzanine Retail	14	18	3	35	9	9	—
Mezzanine Office	4	5	1	11	3	3	—
Total	***2,331 (36.7%)***	***2,451 (38.6%)***	***1,572 (24.7%)***	***6,358***	***1,396***	***859***	***536***
High Commercial Assumption							
Residential	343	511	340	1,193	309	103	206
Office	788	953	254	1,995	476	450	26
Retail	154	201	30	385	98	98	—
Sit-down Restaurant	92	121	19	233	59	59	—
Quick Service Restaurant	1,098	792	1,048	2,938	474	253	222
China Basin Park	4	3	4	12	2	1	1
Brewery	14	14	2	30	11	7	3
Brewery Retail	—	—	—	—	—	—	—
Brewery Restaurant	12	17	3	32	8	8	—
Mezzanine Retail	14	18	3	35	9	9	—
Mezzanine Office	5	6	1	12	3	3	—
Total	***2,524 (36.8%)***	***2,635 (38.4%)***	***1,705 (24.8%)***	***6,864***	***1,449***	***991***	***458***

Note:

[1] Other includes walking, bicycle, motorcycle, taxi, and additional modes.

Source: Appendix E and I, SF Guidelines, 2002; Census ACS 2012; SF Planning Department Survey 2008; Adavant 2015

TABLE 4.E-19. PROPOSED PROJECT EXTERNAL TRIP GENERATION BY MODE – P.M. PEAK HOUR

	External Person-Trips				External Vehicle Trips		
Land Use	**Auto**	**Transit**	**Other[1]**	**Total**	**Total**	**In**	**Out**
High Residential Assumption							
Residential	544	777	454	1,776	492	328	164
Office	472	549	101	1,122	278	15	263
Retail	493	205	523	1,220	194	90	103
Sit-down Restaurant	730	512	648	1,891	315	147	168
Quick Service Restaurant	886	600	711	2,196	382	178	203
China Basin Park	3	2	3	8	1	1	1
Brewery	14	14	2	30	11	3	7
Brewery Retail	54	39	58	150	23	11	11
Brewery Restaurant	100	45	122	267	41	19	22
Mezzanine Retail	45	21	55	122	19	9	10
Mezzanine Office	4	4	1	9	2	—	2
Total	***3,345 (38.1%)***	***2,768 (31.5%)***	***2,678 (30.5%)***	***8,791***	***1,758***	***801***	***954***
High Commercial Assumption							
Residential	325	446	227	997	293	195	98
Office	689	813	173	1,675	409	22	387
Retail	519	223	580	1,322	207	97	111
Sit-down Restaurant	768	549	718	2,036	331	155	176
Quick Service Restaurant	967	684	877	2,528	417	195	222
China Basin Park	3	2	3	8	1	1	1
Brewery	14	14	2	30	11	3	7
Brewery Retail	54	39	58	150	23	11	11
Brewery Restaurant	100	45	122	267	41	19	22
Mezzanine Retail	45	21	55	122	19	9	10
Mezzanine Office	4	5	1	10	2	—	2
Total	***3,488 (38.1%)***	***2,841 (31.1%)***	***2,816 (30.8%)***	***9,145***	***1,755***	***708***	***1,047***

Note:

[1] Other includes walking, bicycle, motorcycle, taxi, and additional modes.

Source: Appendix E and I, SF Guidelines, 2002; Census ACS 2012; SF Planning Department Survey 2008; Adavant 2015

As shown in Table 4.E-20, on the next page, the High Residential Assumption would generate approximately 800 daily delivery/service vehicle trips, consisting primarily of trips made by small trucks and vans. This number would correspond to a demand for 37 loading spaces during an average hour of loading activities and 45 loading spaces during the peak hour of loading activities.

The High Commercial Assumption would create a greater number of daily truck trips and a greater demand for loading spaces. This land use assumption would generate approximately 877 daily truck/service-vehicle trips, corresponding to a demand for 41 loading spaces during an average hour and 49 loading spaces during the peak hour of loading demand. This includes demand for approximately five loading spaces during the peak hour for Pier 48 uses.

PARKING DEMAND

The daily parking demand generated by the proposed project was forecast using the methodology described in the SF Guidelines and is detailed in Table 14 of *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand* memo. The estimated demand for parking that a project may generate is not necessarily the same as what is required by the Planning Code. In addition, the estimates below are most likely overly conservative because of the factors that affect travel behavior, as described in the parking impacts assessment described later in this section under Impact TR-11.

Table 4.E-21, on page 4.E-92, shows that the project would create a peak demand for 3,846 parking spaces during the midday and 3,344 parking spaces in the evening under the High Residential Assumption and 3,655 parking spaces during the midday and 2,614 parking spaces in the evening under the High Commercial Assumption. The parking demand estimates in Table 4.E-21 are based on proposed project uses only and do not take into account existing demand for parking at AT&T Park events, which would be separately managed, as described below.

The project would remove surface parking at Lot A and Pier 48 that serves the existing AT&T Park use. Ballpark parking demand would continue to exist after project construction, although the demand may change in future conditions. The project includes 2,000 parking spaces for AT&T Park events.

TABLE 4.E-20. DELIVERY/SERVICE VEHICLE TRIPS AND LOADING DEMAND

Land Use	Size	Daily Truck Generation Rate	Daily Truck Generation	Average-Hour Loading Space Demand	Peak-Hour Loading Space Demand
High Residential Assumption					
Residential	1,579 units	0.03	47	2.2	2.6
Retail	120,519 sf	0.21	25	1.2	1.4
Office	972,175 sf	0.22	214	9.9	11.9
Sit-down Restaurant	84,363 sf	3.60	304	14.1	16.9
Quick Service Restaurant	36,156 sf	3.60	130	6.0	7.2
China Basin Park	5.12 acres	—	—	—	—
Brewery	190,500 sf	Based on information from project sponsor[1]	76	3.4	4.4
Brewery Retail	11,000 sf				
Brewery Restaurant	11,000 sf				
Mezzanine Retail	10,000 sf	0.21	2	0.1	0.1
Mezzanine Office	7,875 sf	0.22	2	0.1	0.1
TOTAL	—	—	**800**	**36.9**	**44.6**
High Commercial Assumption					
Residential	1,048 units	0.03	31	1.5	1.7
Retail	122,388 sf	0.21	26	1.2	1.4
Office	1,361,181 sf	0.22	300	13.9	16.6
Sit-down Restaurant	85,672 sf	3.60	308	14.3	17.1
Quick Service Restaurant	36,717 sf	3.60	132	6.1	7.3
China Basin Park	5.12 acres	—	—	—	—
Brewery	190,500 sf	Based on information from project sponsor[1]	76	3.4	4.4
Brewery Retail	11,000 sf				
Brewery Restaurant	11,000 sf				
Mezzanine Retail	10,000 sf	0.21	2	0.1	0.1
Mezzanine Office	7,875 sf	0.22	2	0.1	0.1
TOTAL	—	—	**877**	**40.5**	**48.9**

Source: SF Guidelines, 2002; Fehr & Peers, 2017.

Notes:

Numbers may not sum because of rounding.

1. Truck count data were collected at the existing Anchor Brewery in San Francisco and adjusted to reflect the proposed brewery on Pier 48. SF Guidelines do not provide loading data for brewery uses.

Source: Appendix B, The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand. Adavant Consulting, June 30, 2015.

TABLE 4.E-21. PROPOSED PROJECT PEAK PARKING DEMAND

Land Use	High Residential Assumption			High Commercial Assumption		
	Long Term Parking Demand	Short Term Parking Demand	Total Parking Demand	Long-Term Parking Demand	Short-Term Parking Demand	Total Parking Demand
Midday						
Residential	1,895	—	1,895	1,258	—	1,258
Office	898	145	1,043	1,250	210	1,460
Retail	89	203	292	89	216	305
Sit-down Restaurant	56	151	207	56	159	215
Quick Service Restaurant	39	255	294	39	263	302
Brewery	41	40	81	41	40	81
Mezzanine Retail	7	18	25	7	18	25
Mezzanine Office	7	7	8	7	1	8
China Basin Park	—	1	1	—	1	1
TOTAL	**3,032**	**814**	**3,846**	**2,747**	**908**	**3,655**
Evening						
Residential	2,369	—	2,369	1,572	—	1,572
Office	90	7	97	125	10	135
Retail	89	182	271	89	194	283
Sit-down Restaurant	62	201	263	62	212	274
Quick Service Restaurant	35	204	239	35	210	245
Brewery	42	38	80	42	38	80
Mezzanine Retail	7	16	23	7	16	23
Mezzanine Office	1	—	1	1	—	1
China Basin Park	—	1	1	—	1	1
TOTAL	**2,695**	**649**	**3,344**	**1,933**	**681**	**2,614**

Source: SF Guidelines Appendix 4-4; Adavant Consulting, 2015

Notes:

1. The estimates in the table are most likely overly conservative because of the factors that affect travel behavior, as described in the Impact TR-2 discussion.

Because the number of studio, one-bedroom, and two-bedroom residential units proposed at the project site have not yet been determined, the calculated residential parking demand is based on a demand rate of 1.5 spaces for each dwelling unit as given in the SF Guidelines, which is the rate for 2+ bedroom dwelling units. Therefore, these parking demand forecasts represent a conservative analysis because it is unlikely that all of the units would be 2-bedroom units. Long-term parking demand for the office, retail, restaurant, and industrial (specifically analyzed as a proposed brewery) uses were estimated by applying the average mode split and the vehicle occupancy from the trip generation estimation to the number of employees for each of the proposed land uses. Short-term parking demand for the office, retail, restaurant, open space, and industrial (specifically analyzed as a proposed brewery) uses was estimated based on the total daily visitor trips and an average daily parking turnover rate (5.5 vehicles per space per day) obtained from the SF Guidelines.

Table 4.E-21, on the prior page, presents the project-generated parking demand during the midday and evening peaks. The forecast peak evening demand of 3,344 spaces for all proposed uses in the High Residential Assumption is 244 spaces more than the 3,100 spaces that the project would provide. However, during a weeknight ball game, parking management measures would be implemented to allocate 2,000 spaces to ballpark patrons. Pricing controls would be used to encourage users to vacate spaces before they are needed for AT&T Park patrons, similar to how the pricing controls operate today at Lot A. The remaining 1,100 parking spaces would be available for project uses during Giants games on weekday evenings (a floor or portion of the Block D2 parking garage would be reserved for project residents and employees). This parking would be prioritized for project residents and employees who hold parking permits. The forecast peak project-generated demand during the midday for as many as 3,846 parking spaces in the High Residential Assumption would be 746 spaces more than the project would provide.

The forecast peak evening demand of 2,614 spaces for all proposed uses in the High Commercial Assumption would be accommodated by the 3,100 spaces that the project would provide. During a weekend ball game, parking management measures would be implemented to allocate 2,000 spaces to that ballpark event. Pricing controls would be used to encourage users to vacate spaces before they are needed for AT&T Park patrons, similar to how the pricing controls operate today at Lot A. The remaining 1,100 parking spaces would be available for project uses during Giants games on weekends (a floor or portion of the Block D2 parking garage would be reserved for project residents and employees). This parking would be prioritized for project residents and employees who hold parking permits. The forecast peak project-generated demand during the midday for as many as 3,655 parking spaces in the High Commercial Assumption would be 555 spaces more than the project would provide.

CUMULATIVE IMPACTS METHODOLOGY

The cumulative impact analysis is divided into two main groups: constructed-related impacts and operational impacts. The first group covers impacts attributable to construction-related activities of other nearby projects expected to be under construction at the same time. The second group covers the long-term effects associated with the full use of the project structures and features following construction based on future year 2040 conditions.

CUMULATIVE PROJECTS

CUMULATIVE PROJECTS FOR CONSTRUCTION IMPACTS

The cumulative impact analysis considers the combined effects of multiple construction projects within the project vicinity during the same time frame as the proposed project's construction schedule. Construction projects in the vicinity of the proposed project include the following:

- **Third Street Bridge Project**. The Third Street Rehabilitation Project, being undertaken by San Francisco Public Works, consists of rehabilitation of the Third Street Bridge (also known as the Francis "Lefty" O'Doul Bridge), located just north of the project site. The rehabilitation project will involve the entire span of the bridge and requires a temporary reduction in roadway capacity. Project-related construction is anticipated to occur for 14 months, beginning spring 2017 and ending summer 2018.
- **Extension of 16th Street.** The extension of 16th Street, between Illinois Street and Terry A. Francois Boulevard, is expected to be completed by 2018.
- **Realignment of Terry A. Francois Boulevard and Mission Bay Park P22.** The realignment of Terry A. Francois Boulevard, between South Street and 16th Street, and construction of Park P22 is estimated to be completed by 2018.
- **UCSF Research Building, Block 23A.** Located southwest of the projects site, this project consists of about 170,000 gsf and is expected to begin construction in fall 2017.
- **UCSF East Campus, Blocks 33/34.** Located south of 16th Street and east of Third Street, this project consists of 500,000 gsf of office space. Block 33 is anticipated to begin construction in June 2017. Block 34 construction would occur in the 2020 to 2025 timeframe.
- **UCSF Cancer Outpatient Building on Medical Center Site.** Located on the southwest corner of the Third Street/16th Street intersection, this project is a 180,000 gsf of medical outpatient facility. Construction is anticipated to begin in 2017 and be completed by early 2019.
- **Pier 70 Mixed-Use District Project.** Located east of Illinois Street and roughly bounded on the south by 22nd Street and on the north by 20th Street, this project would have a mix of residential, office, retail, and restaurant uses. Build-out would occur in up to five phases over an approximately 11-year period from about 2018 through 2029.

CUMULATIVE TRANSPORTATION PROJECTS FOR OPERATIONAL IMPACTS

There are several reasonably foreseeable transportation improvements planned on the transportation network in the study area. For the purposes of the transportation analysis for this EIR, the following transit improvements from Muni Forward were assumed to be in place as part of the 2040 cumulative conditions, in addition to those assumed to be in place for the baseline conditions:

- On the T Third light rail line, a.m./p.m. peak period headways would be reduced and trains would operate as two-car trains.[43]
- The 10 Townsend route would be rerouted off Townsend Street at Fourth Street. From Fourth Street the route would extend through Mission Bay to new proposed street segments on Seventh Street between Mission Bay Boulevard and Hubble Street, on Hubble Street between Seventh and 16th Streets, on 16th Street between Hubble and Connecticut Streets, and on Connecticut Street between 16th and 17th Streets. The a.m./p.m. peak period headways would be reduced from 20 to 6 minutes. Midday headways would be reduced from 20 to 12 minutes. The 10 Townsend would be renamed the 10 Sansome.

Other transportation projects assumed complete and operational in the cumulative transportation analysis include:

- Blue Greenway, a 13-mile corridor of multi-use trails, parks, and bay access points along San Francisco's southeastern waterfront [44]
- 16th Street Extension, from Illinois Street to Terry A. Francois Boulevard
- San Francisco Bicycle Plan
- Van Ness and Geary Bus Rapid Transit Projects
- Caltrain Peninsula Corridor Electrification Project

CUMULATIVE DEVELOPMENT PROJECTS FOR OPERATIONAL IMPACTS

In addition to the transportation improvements listed above, the cumulative transportation impact analysis includes forecast growth in jobs and employment in San Francisco by the year 2040. This growth includes the following reasonably foreseeable nearby development projects:

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[43] The assumptions for service increases as part of the Central Subway described herein are based on the Central Subway operating plan, which were developed independent of and supersede assumptions for the T-Third Short Line outlined in Muni Forward.

[44] The proposed project would include construction of the portion of the Blue Greenway within the project site.

- Mission Bay Redevelopment Plan, as modified (the portions not yet built out);
- Pier 70 (mixed-use project with housing, office, light industrial, arts, general retail, and restaurant uses);
- Candlestick Point-Hunters Point Shipyard Development Plan (500-acre master-planned community with 12,000 housing units, more than 300 acres of parks, and more than 3 million gsf of research and development uses);
- Development associated with nearby neighborhood plans, including the Eastern Neighborhoods Plans and the Western SOMA Plan;
- Golden State Warriors Event Center and Mixed-Use Development Project at Mission Bay Blocks 29–32 (including an 18,064-seat event center, 605,000 gsf of office uses, 62,500 gsf of retail uses, 62,500 gsf of restaurant uses, and 950 below-grade or at-grade parking spaces);
- Future Crane Cove Park (7-acre waterfront park, east of Illinois Street between 19th Street and Mariposa Streets);
- India Basin (30-acre mixed-use master-planned development with housing, retail/commercial, open space, park, and school uses); and
- Potrero Hope SF Master Plan (38-acre mixed-income housing project with community-serving retail).

The cumulative transportation analysis is projection-based, rather than list-based; therefore, the projects listed above are examples of those that are accounted for in the growth forecasts used in the travel demand forecasting model. The model includes a comprehensive projection of growth that is reasonably foreseeable in 2040, based on known and forecast development including growth under adopted area plans that could affect San Francisco's transportation network.

CUMULATIVE TRANSPORTATION DEMAND

Future year 2040 cumulative intersection traffic volumes were derived from outputs from the SFCTA's travel demand forecasting model (SF-CHAMP). The SF-CHAMP model is an activity-based travel demand model that has been validated to represent existing and future transportation conditions in San Francisco. The model predicts all person travels for a full day based on total and locations of population, housing units, and employment, which are then allocated to different periods throughout the day, using time of day sub-models. The model predicts person travel by mode for walking, auto, transit, and bicycle trips. The model also provides forecasts of vehicular traffic on regional freeways and major arterials and on the study area local roadway network, considering the available roadway capacity, origin-destination demand, and travel speeds when assigning the future travel demand to the roadway network.

Future year 2040 cumulative transit ridership projections were developed based on transit growth projections developed for the Transit Effectiveness Project and provided by the Planning Department. Forecast future hourly ridership demand was then compared to expected hourly capacity, as determined by the likely route and headway changes identified in Muni Forward, including those described above under the *Travel Demand Analysis* discussion, to estimate capacity utilization under 2040 cumulative conditions.

CUMULATIVE SB 743/VMT METHODOLOGY

OPR's proposed transportation impact guidelines do not specify a separate methodology for analyzing cumulative impacts using a VMT metric. Under CEQA, a project is considered to have "cumulatively considerable" impacts if the incremental effects of the individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines Section 15065(a)(3)).

VMT by its very nature is largely a cumulative impact. In general, no single project by itself would be large enough to prevent the region or state from meeting its VMT (and GHG) reduction goals. Rather, an individual project's VMT contributes cumulatively to the physical secondary environmental impacts associated with the VMT resulting from the distance that existing, currently proposed, and future projects would be expected to cause people to drive. VMT (and induced automobile travel) project-level significance thresholds are based on whether project VMT levels would be consistent with state and regional long-term GHG emissions reduction targets and corresponding VMT per capita reduction targets.

The Planning Department determined that a project's incremental VMT effects are not cumulatively considerable if the project site is in an area where per capita VMT is more than 15 percent below the projected 2040 per capita regional averages for residential, office, and retail uses. This is an appropriate metric to assess cumulative VMT impacts for the reasons set forth below.

As noted above, the SFCTA uses SF-CHAMP to estimate VMT for different land use types within individual TAZs. For the cumulative scenario, San Francisco 2040 cumulative VMT conditions, including cumulative VMT conditions for the TAZ where the project is located, were projected using a SF-CHAMP model run. This model run used the same methodology as outlined for existing conditions but included residential and job growth estimates and reasonably foreseeable transportation investments through 2040, based on the most recent ABAG projections (with projected citywide growth in population and employment allocated to individual TAZs by the Planning Department).

As stated above, OPR's proposed use of a VMT metric is intended to implement SB 743's mandate to establish criteria for determining the significance of project transportation impacts that promote the "reduction of greenhouse gas emissions." Notably, San Francisco has been

shown to have a significantly lower per-household carbon footprint than most other cities and counties in the San Francisco Bay Area region. Specifically, a December 2015 GHG consumption study published by the University of California, Berkeley and funded by the Bay Area Air Quality Management District (BAAQMD)[45] concluded that the average San Francisco household produces 38.7 metric tons of carbon dioxide equivalents (CO_2e) annually, which is 12.7 percent lower than the overall San Francisco Bay Area average household emissions of 44.3 metric tons of CO_2e.

Maintaining per capita VMT that is 15 percent or more below the regional average is an essential component of the City's aggressive GHG reduction targets, detailed in Section 4.H, *Greenhouse Gas Emissions*. Specifically, Ordinance No. 81-08, adopted in May 2008, established targets that included reducing GHG emissions by 25 percent below 1990 levels by 2017, reducing GHG emissions by 40 percent below 1990 levels by 2025, and reducing GHG emissions by 80 percent below 1990 levels by 2050. The targets are consistent with and, in fact, more ambitious than those set forth in Governor Brown's recent Executive Order B-30-15 by targeting a 40 percent reduction by 2025 rather than a 40 percent reduction by 2030.

Similarly, reducing per capita VMT is also a key component of the City's local GHG reduction plan, Strategies to Address Greenhouse Gas Emissions, which has been recognized by BAAQMD as meeting the criteria of a qualified GHG reduction strategy. As further described in Section 4.H, *Greenhouse Gas Emissions*, the City's GHG reduction strategy includes 30 specific regulations for new development to reduce a project's GHG emissions. In fact, GHG reduction actions in San Francisco resulted in a 23.3 percent reduction in GHG emissions in 2012 compared to 1990 levels, exceeding the 2020 reduction goals in BAAQMD's *Bay Area 2010 Clean Air Plan*, Executive Orders S-3-05 and B-30-15, and AB 32. By complying with and exceeding Plan Bay Area targets, San Francisco is on a trajectory to meet the GHG reduction goals established by AB 32 and SB 375.

The Planning Department's cumulative significance threshold of 15 percent below 2040 per capita regional average VMT and the proposed project's VMT per capita, which is well below that threshold, are consistent with the adopted sustainability targets of Plan Bay Area. The current Plan Bay Area, adopted on July 18, 2013, is the region's sustainable communities strategy for the San Francisco Bay Area for 2013–2040. The current update that began in spring 2015 is called Plan Bay Area 2040, with release of the Draft Plan Bay Area 2040 and associated Draft EIR anticipated in spring 2017.

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[45] Jones, C., and D. Kammen. 2015. *A Consumption-based Greenhouse Gas Inventory of San Francisco Bay Area Neighborhoods, Cities and Counties: Prioritizing Climate Action for Different Locations*. University of California, Berkeley and Bay Area Air Quality Management District. Available: http://www.baaqmd.gov/research-and-data/emission-inventory/consumption-based-ghg-emissions-inventory. Accessed: September 30, 2016.

Plan Bay Area 2013 is designed to reach GHG reductions established by CARB for the Bay Area region (i.e., a 7 percent per capita reduction by 2020 and a 15 percent per capita reduction by 2035).[46] Plan Bay Area 2013 identified 10 performance targets, which include both mandatory and voluntary targets. One of the mandatory performance targets requires the Bay Area to reduce its per capita carbon dioxide (CO_2) emissions from cars and light-duty trucks by 15 percent by 2040. Plan Bay Area achieves this milestone.[47] One of the voluntary targets includes decreasing automobile VMT per capita by 10 percent.[48] Plan Bay Area 2013 states that the average Bay Area resident traveled about 22 miles by car on a typical weekday in 2005; by 2040, the average resident is expected to travel 20 miles per day, a reduction of 9 percent. This near-achievement of the per capita VMT target reflects the carefully targeted locations of envisioned housing and commercial development in Priority Development Areas (PDAs) with excellent transit service.[49] Even though Plan Bay Area achieves VMT reductions of 9 percent, which does not fully achieve the adopted 10 percent reduction target, Plan Bay Area nonetheless achieves the mandatory performance target to reduce per capita CO_2 emissions from cars and light-duty trucks by 15 percent by 2040.[50]

Notably, the type of growth planned within the Port of San Francisco PDA, as well as growth within the city and county of San Francisco as a whole, will necessarily result in a population-based increase in the volume of VMT and GHG emissions, regardless of the City's GHG reduction targets and any new GHG reduction measures. Similarly, the population and economic activity associated with each project within the Port of San Francisco PDA, as well as within the city and county of San Francisco, will result in a total increase in VMT and GHG emissions. Certain projects may meet or exceed estimated population and/or employment growth identified for the Port of San Francisco PDA while remaining within ABAG projections for the 2040 cumulative scenario. Notwithstanding such increased volume of GHG emissions and VMT, San Francisco complies with and exceeds Plan Bay Area GHG reduction targets and is on a trajectory to meet the GHG reduction goals established by AB 32 and SB 375. Accordingly, consistency with Plan Bay Area, a plan designed to reach GHG reductions established by CARB for the Bay Area region, provides further support for the Planning Department's adopted significance threshold for determining whether a project's incremental VMT effects are cumulatively considerable.

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[46] Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 18, 2013 (hereinafter "Plan Bay Area 2013"), p. 4.

[47] Plan Bay Area 2013, p. 5.

[48] Ibid., p. 106.

[49] Ibid.

[50] Ibid., p. 5.

IMPACTS AND MITIGATION MEASURES

CONSTRUCTION IMPACTS

Impact TR-1. Construction of the proposed project would not result in significant impacts on the transportation and circulation network. (Less than Significant)

The discussion of construction impacts is based on currently available information from the project sponsor, summarized in Chapter 2, *Project Description*, and professional knowledge of typical construction practices in San Francisco. Buildout of the proposed project would occur in four phases over an approximately 6-year period, through approximately 2023. Construction impacts would be similar for both the High Residential Assumption and the High Commercial Assumption.

Construction-related activities generally would occur Monday through Saturday, between 7:00 a.m. and 8:00 p.m., and the typical work shift for most construction workers would be from 7:00 a.m. to approximately 3:30 p.m. Construction is not anticipated to occur on Sundays or major legal holidays, but may occur on these days on an as-needed basis. The hours of construction would be stipulated by the relevant City agencies, including the Department of Building Inspection and the Port. Construction staging would occur within the project site.

The project sponsor and construction contractor(s) would be required to prepare traffic control plans for the various construction phases, which would be intended to reduce potential conflicts between construction activities and pedestrians and vehicles at the project site and with other construction projects in the project vicinity that are expected to occur during the 6-year construction period.

The number of construction-related truck trips would range from four to 68 per day, depending on the construction phase. The truck trips would involve material delivery, material removal, and soil hauling. It is anticipated that the soil off-haul location would be in Brisbane, approximately 6 miles south of the project site. The haul route from the project site would have trucks travel south on Third Street to Mariposa Street, south on I-280 to US 101, and along Beatty Avenue in Brisbane to west of US 101. A potential debris disposal location would be in South San Francisco, with the haul route starting on Third Street, continuing to Mariposa Street, then south to US 101, exiting at Oyster Point Boulevard East. Third Street and Mariposa Street between Third Street and I-280 have two travel lanes in each direction and are designed to handle truck traffic. The impact of construction traffic on these streets could result in a slight lessening of their capacities because of slower-moving vehicles but would not substantially affect a.m./p.m. peak-period conditions because construction work schedules do not typically coincide with the peak commute periods. Mariposa Street between I-280 and US 101 has one travel lane in each direction and a weight restriction for trucks. Trucks weighing more than 3

tons would be required to take alternate routes (e.g., access I-280 at the Mariposa Street interchange and travel to Brisbane via I-280 and US 101). Truck access routes would be reviewed with the SFMTA as part of the traffic control plans.

If temporary traffic lane, parking lane, or sidewalk closures during construction would be needed along Third Street or Mission Rock Street, the closures would be coordinated with City staff to minimize effects on local traffic and circulation. In general, lane and sidewalk closures are subject to review and approval by the City's Transportation Advisory Staff Committee (TASC). TASC consists of representatives of City departments, including SFMTA, San Francisco Public Works, the Fire Department, Police Department, Health Department, the Port, and the Taxi Commission. Access to the Muni light rail stop at Mission Rock Street would be maintained. There are no Muni bus stops adjacent to or on the project site; therefore, none would need to be relocated.

The number of construction workers per day at the project site would be between 30 and 400. The maximum number of construction workers would be present onsite during the foundation and building phase of construction (the third building phase). 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. Additionally, impacts on local intersections or the transit network would be substantially less than those associated with the proposed project and temporary in nature. Construction workers who drive to the site would be accommodated in Lot A until parking is available in the parking garage on Block D2 (Area 2). Any construction-related parking shortfalls would be temporary.

Overall, the proposed project's construction activities would be temporary and limited in duration; would not result in substantial interference with pedestrian, bicycle, or vehicle circulation; would not result in hazardous conditions for pedestrians, bicycles, or vehicles; and are required to be conducted in accordance with City requirements. Therefore, the proposed project's construction-related work would have a ***less-than-significant*** impact on transportation and no mitigation measures would be required. However, the following Improvement Measure (I-TR-1) is identified to further reduce ***less-than-significant*** potential conflicts between construction activities and pedestrians, bicyclists, and transit and other vehicles and between construction activities and nearby businesses and residents:[51]

[51] Improvement measures are recommended further actions agreed to by the project sponsor to reduce or avoid impacts that are determined to be less than significant. The identification of improvement measures is not required under CEQA, but the measures are often presented in San Francisco environmental documents to inform decision-makers of additional actions that could improve the proposed project.

I-TR-1: Construction Management Plan

Traffic Control Plan for Construction – To reduce potential conflicts between construction activities and pedestrians, bicyclists, transit and autos during construction activities, the project sponsor should require construction contractor(s) to prepare a traffic control plan for major phases of construction (e.g. demolition and grading, construction, or renovation of individual buildings). The project sponsor and their construction contractor(s) should meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction. This includes coordinating project construction activities with nearby City construction projects, such as the Third Street Rehabilitation Project. For any work within the public right-of-way, the contractor would be required to comply with the San Francisco's Regulations for Working in San Francisco Streets, which establishes rules and permit requirements so that construction activities can be conducted safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. Additionally, restrict truck movements and deliveries to the maximum feasible extent during peak hours (generally 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or other times, as determined by SFMTA and the TASC).

In the event that the construction timeframes of the major phases and other development projects adjacent to the project site overlap, the project sponsor should coordinate with City agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. The project sponsor, in conjunction with the adjacent developer(s), should propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as coordinated material drop-offs, collective worker parking and transit to job site and other measures.

Reduce Single-Occupant Vehicle Mode Share for Construction Workers – To minimize parking demand and vehicle trips associated with construction workers, the project sponsor should require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the project construction sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – To minimize construction impacts on access for nearby residences, institutions, and businesses, the project sponsor should provide nearby residences and adjacent

businesses with regularly updated information regarding construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

OPERATIONAL IMPACTS

VMT IMPACTS

The following identifies the thresholds of significance and screening criteria used to determine if a land use project or plan would result in significant impacts under the VMT metric in the city of San Francisco. San Francisco uses maps that illustrate areas that exhibit below-threshold VMT. The maps demonstrate whether a proposed project is in a transportation-efficient location, (e.g., transit-oriented infill) and will help the City, region, and state reach their GHG reduction targets under AB 32. The Transportation Authority has prepared SF-CHAMP model runs to estimate the existing VMT generated per capita within each of the City's TAZs for residential, office, and retail land uses.

For residential projects, a project would generate substantial additional VMT if it were to exceed the regional household VMT per capita minus 15 percent. This metric is consistent with OPR's proposed transportation impact guidelines that state that a project would cause substantial additional VMT if it were to exceed both the existing city household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent. For office projects, a project would generate substantial additional VMT if it were to exceed the regional VMT per employee minus 15 percent. For active/retail projects, the Planning Department uses a VMT efficiency metric approach for active/retail projects (i.e., a project would generate substantial additional VMT if it were to exceed the regional VMT per retail employee minus 15 percent).

Impact TR-2. The proposed project would not cause substantial additional VMT nor substantially induce automobile travel. (Less than Significant)

As summarized in Table 4.E-3, on page 4.E-14, existing average daily VMT per capita is more than 15 percent below the existing regional average daily VMT per capita for residential, office, and retail uses in TAZ 655 where the proposed project is located. The existing VMT per capita for residential uses in TAZ 655 is estimated to be 3.5, which is approximately 80 percent less than the existing regional average of 17.2. The existing VMT per capita for office uses in TAZ 655 is estimated to be 12.1, which is approximately 37 percent less than the regional average of 19.1. The existing VMT per capita for retail uses is estimated to be 10.4, which is approximately 30 percent less than the regional average of 14.9.

Because the project site is located in an area where existing VMT is more than 15 percent below the existing regional average, the proposed project's residential, office, and retail (and, thus, industrial, open space, and restaurant) uses would not result in substantial additional VMT, and impacts would be ***less than significant***.

INFLUENCE OF PARKING SUPPLY ON VMT

For the reasons set forth below, the amount of parking included in the project would not result in VMT that would be beyond the significance threshold. As stated above, many factors affect travel behavior. These factors include density, the diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and TDM. The Transportation Authority's SF-CHAMP accounts for a variety of factors to estimate VMT throughout San Francisco, but SF-CHAMP is not sensitive to site-level characteristics such as project-specific TDM measures or the amount of parking provided on a site, which itself is considered a TDM measure.

As part of the Shift component of the Transportation Sustainability Program, the City is pursuing the San Francisco TDM Program. The purpose of the TDM Program is to reduce VMT that is otherwise predicted to occur from new development (in SF-CHAMP or other transportation modeling software), based on the new development's TAZ location. To achieve this VMT reduction, property owners must select from TDM measures (i.e., measures that reduce VMT by residents, tenants, employees, and visitors) that are under the control of the property owner. A reduction in VMT may result from shifting vehicle trips to sustainable travel modes or reducing the number of vehicle trips, increasing vehicle occupancy, or reducing the average vehicle trip length.

The TDM Technical Justification document[52] provides the technical basis for applicability, targets, and assignment of points to individual measures on the TDM menu used for the San Francisco TDM Program.[53] Each of the TDM measures on the menu is assigned a number of points, reflecting its relative effectiveness in reducing VMT. This relative effectiveness determination is grounded in literature review, local data collection, best practices research, and professional transportation-expert opinion. One of the individual measures in the TDM menu that was researched was parking supply, as described below.

In 2010, CAPCOA published a report that quantifies project-level land use, transportation, energy use, and other measures of effects on GHG emissions, based on a literature review of research conducted to date.[54] The CAPCOA report identifies a maximum 12.5 percent reduction in VMT related to parking supply (PDT-1). Recent research, described further below, indicates that an area with more parking influences higher demand for more automobile use.

A New York City study of three boroughs showed a clear relationship between guaranteed vehicular parking at home and a greater tendency to use the automobile for trips made to and from work, even when both work and home are well served by transit. The study also infers

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52 San Francisco Planning Department. 2016. Transportation Demand Management Technical Justification. June.

53 San Francisco Planning Department. 2016. *Transportation Demand Management Technical Justification*. June.

54 California Air Pollution Control Officers Association. 2010. *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures.* August.

that driving to other non-work activities is also likely to be higher for households with guaranteed vehicular parking. [55] Related literature that focused on the relationship between the availability of free on-street parking and the number of cars per household supports the findings that the availability of parking increases private car ownership by approximately 9 percent.[56] A study of households within a 2-mile radius of 10 rail stations in New Jersey concluded that if development near transit stations is developed with a high parking supply (on- and off-street parking), then those developments will not reduce automobile use compared to developments located farther away from transit stations, and that parking supply can undermine the incentive to use transit.[57] A study of nine cities across the United States looked at the question of whether citywide changes in vehicular parking cause automobile use to increase or whether minimum parking requirements is an appropriate response the already rising automobile use. The study concluded that "parking provision in cities is a likely cause of increased driving among residents and employees in those places."[58]

Research conducted in San Francisco focused on whether or not a relationship exists between the provision of off-street parking and the choice to drive among individuals traveling to or from the site (similar to the focus of one of the questions in the nine-city United States study). Following data collection and an empirical review of the data, this research found that reductions in off-street vehicular parking for office, residential, and retail developments reduce the overall automobile mode share associated with those developments, relative to projects with the same land uses in similar contexts that provide more off-street vehicular parking.[59] In other words, more off-street vehicular parking is linked to more driving, indicating that people without dedicated parking spaces are less likely to drive.

Based on the recent research, a reduced parking supply is one the most effective TDM measures available in the menu for the TDM Program. Eleven options (with points associated with them) are provided for this TDM measure in the TDM Program, depending on the development project's parking supply[60] compared to the neighborhood parking rate. The neighborhood parking rate is the number of existing parking spaces provided per dwelling unit or per 1,000 square feet of nonresidential uses for each TAZ within San Francisco.[61]

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55 Weinberger, Rachel. 2012. Death by a Thousand Curb-cuts: Evidence on the Effect of Minimum Parking Requirements on the Choice to Drive. *Transport Policy 20.* March.

56 Zhan, Guo. 2013. Residential Street Parking and Car Ownership. *Journal of the American Planning Association* 79:1, 32–48. May 9.

57 Chatman, Daniel. 2015. Does Transit-Oriented Development Need the Transit? *Access*.

58 McCahill, Chris, et al. 2015. *Effects of Parking Provision on Automobile Use in Cities: Inferring Causality.* Transportation Research Board. November 13.

59 Fehr and Peers. *Parking Analysis and Methodology Memo – Final*. April 27, 2015.

60 This refers to accessory (or off-street) parking supply, which is defined in the TDM Program Standards.

61 City and County of San Francisco. 2016. *Transportation Demand Management Technical Justification*. Appendix B. June.

Using the neighborhood parking rate as a basis for assigning points accounts for the variability in geography throughout San Francisco and the effect this can have on travel behavior. Although parking supply is not an input into SF-CHAMP, based on the recent research, the existing parking supply within a TAZ has a relationship with VMT for that TAZ. Therefore, a new development would most likely not reduce VMT as it relates to parking supply if the new development is not at least at or below the neighborhood parking rate.

The existing neighborhood parking rate for the project site (TAZ 655) is 0.65 per residential unit and 0.98 per 1,000 square feet of nonresidential space. The parking rate takes into account the amount of parking as well as residential and nonresidential square footage in the TAZ itself and other nearby TAZs (within 0.75 mile, based on walking distance), with more-distant parking and residential and nonresidential square footage given decreasing weight. Therefore, although the project site functions as surface parking lot for patrons of AT&T Park and approximately 500 daytime commuters (primarily those working in nearby commercial buildings), the neighborhood parking rate accounts for nearby residential and nonresidential square footage.

Even though parking is not specifically an input in SF-CHAMP, the existing parking is captured in the estimates of VMT outputs from SF-CHAMP because it is an existing condition on the ground. As mentioned above, existing average daily VMT per capita, per employee, and per retail employee in TAZ 655 is approximately 80, 37, and 30 percent below the existing regional average daily VMT per capita, per employee, and per retail employee, respectively. Therefore, in order to exceed the threshold of 15 percent below regional averages, the project would have to substantially increase VMT per capita, per employee, and per retail employee.

In order to account for an increase or decrease in VMT per capita, the project's parking rate is compared to the neighborhood parking rate. The proposed project would include up to 3,100 parking spaces. Two thousand (2,000) parking spaces would be made available for AT&T Park patrons to replace a portion of the parking spaces on the existing surface parking lot. The precise allocation of parking spaces would be determined over time, but the parking spaces would generally be allocated to residential and nonresidential uses at approximately the following ratios: 0.5 space per unit and 0.4 space per 1,000 square feet of office. These rates are lower than the neighborhood average, meaning that the proposed project may be expected to generate lower VMT rates than the forecasts from SF-CHAMP (which are designed to project the "average" project) would otherwise suggest. There are additional features of the proposed project that influence the way parking conditions affect travel. The proposed project's parking supply is intended to be shared amongst all uses and not dedicated to any specific land use type or user. This means that each space most likely gets used more often than if it were dedicated to a specific use, which indicates a higher amount of VMT per parking space. If one were to assume additional parking spaces would be available to non-residential uses, the parking rate would be

within the range 1.6 or 1.9 space per 1,000 square feet of non-residential uses.[62] This would indicate that the proposed project's non-residential uses may be expected to generate higher VMT rates than SF-CHAMP would otherwise suggest. However, because of the shared use, individual users have no guarantee—especially on San Francisco Giants game days—that a parking space would be available for them. As discussed above, a lack of certainty for an individual regarding availability of off-street parking may reduce overall vehicle travel than for a dedicated space.

Additionally, the above discussion does not fully account for the reduction in VMT likely to occur due to the proposed project's TDM Plan, which includes robust measures to reduce VMT. The TDM Technical Justification document includes documentation regarding the estimated VMT reduction from many of the measures included in the proposed project's TDM Plan.

The density and mix of uses proposed for the project, including the mix of office, residential, retail, industrial, and park land uses would result in an internalization of trips ranging from 13 to 17 percent. The density and mix of uses of the proposed project, in combination with the site's proximity to major planned transit and bicycle investments, would result in a substantial number of external trips by transit and bicycle modes, would reduce VMT for the project.

Given that shared parking results in some uncertainty for an individual regarding the availability of parking, the project's TDM Plan would be expected to reduce VMT, and the VMT estimates for the site are substantially below the significance threshold, the VMT impacts of the proposed project would be ***less than significant***.

Although the VMT impacts would be ***less than significant***, implementation of the Air Quality Mitigation Measure M-AQ-2.3: Transportation Demand Management, pp. 4.G.47-4.G.50, would likely further reduce the proposed project's ***less-than-significant*** impacts related to VMT such that it would be lower than the forecasts discussed above, if implemented. Generally, Mitigation Measure M-AQ-1f would require the reduction of single-occupant automobile trips through TDM elements that would supplement those outlined in the proposed project's TDM Plan.

IMPACT OF PROJECT ON INDUCED TRAVEL AND VMT

The proposed project is not a transportation project. However, the proposed project would include features that would alter the transportation network. These features include sidewalks, bicycle facilities, on-street loading zones, new curb cuts, new internal roadways, on-street safety

[62] Both ranges assume 0.5 parking spaces per residential unit and the remaining parking spaces available for nonresidential uses. At the lower end of the residential unit range, 1,000 units, it is assumed 500 parking spaces would be unavailable for nonresidential uses. That would leave 2,600 parking spaces for 1.65 million gsf of nonresidential uses. At the higher end of the residential unit range, 1,600 units, it is assumed 800 parking spaces would be unavailable for nonresidential uses. That would leave 2,300 parking spaces for 1.21 million gsf of nonresidential uses.

strategies, and intersection signalization, as described in Chapter 2, *Project Description*. These features fit within the general types of projects that would not substantially induce[63] automobile travel; therefore, impact would be ***less than significant***.

TRAFFIC IMPACTS

Impact TR-3. The proposed project would result in queues that would create traffic hazards. (Less than Significant with Mitigation)

Most vehicle trips to and from the project site would use Third Street, Fourth Street, Mission Rock Street, Channel Street, or the portion of Terry A. Francois Boulevard south of Mission Rock Street. A small share of vehicle traffic destined for the Block D2 parking garage is expected to enter the site from the south via Third Street and Long Bridge Street or from the north via Third Street, Exposition Street, and Bridgeview Street. Vehicle travel on Terry A. Francois Boulevard and the Shared Public Way within the project site is expected to be relatively low. Although the proposed project would add vehicle trips to surrounding roadways, a general increase in traffic would not be considered a traffic hazard. The proposed project's internal street system has been designed with narrow street widths, separated bicycle facilities, and wide sidewalks, which would encourage bicycling and walking.

When events are planned at the Mission Rock site, the event sponsor may be required to obtain applicable permits from the Port or the City; these permits may include strategies to enhance transportation conditions in Mission Bay and nearby neighborhoods. For all events held at the Seawall Lot 337 and Pier 48 site, the event sponsor must obtain applicable permits from the Port and the City. As part of the permitting process, the event sponsor must include a plan for managing travel, with minimal effect on the surrounding neighborhoods.

An evaluation of queues at the proposed project's parking garages was conducted to assess potential impacts associated with on-street queues. The queue evaluation reports the potential for queues on Long Bridge Street at both proposed driveway locations to the Block D2 aboveground garage. A queue would occur as eastbound vehicles destined for the westernmost driveway on Long Bridge Street (i.e., closest to Third Street) to the Block D2 aboveground garage queue back into the northbound lanes of Third Street during peak pre-event hours for major AT&T Park events, such as Giants games. The Mission Rock Transportation Plan requires that a PCO, who would manage traffic as well as access to the Long Bridge Street driveways, would be located at the westernmost driveway on Long Bridge Street prior to major events at AT&T Park. Thus, no significant traffic hazards would occur at this location.

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[63] Governor's 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)*, page 28, January 20, 2016.

In addition, a queue would occur during both nonevent and event conditions near the easternmost driveway on Long Bridge Street to the Block D2 aboveground garage, which is approximately 25 feet west of Bridgeview Street. Eastbound vehicles would create a queue at the all-way stop at the Long Bridge Street/Bridgeview Street intersection. This queue would in turn prevent westbound vehicles on Long Bridge Street from turning left into the Block D2 aboveground garage easternmost driveway along Long Bridge Street. These westbound vehicles would then queue into the Long Bridge Street/Bridgeview Street intersection and impede the flow of vehicles, bicyclists, and pedestrians and create potential hazards. This would be a ***significant*** impact.

The proposed project would result in a significant impact because vehicle queues waiting to enter the easternmost driveway of the Block D2 parking garage on Long Bridge Street would extend into the adjacent intersection of Long Bridge Street/Bridgeview Street. The queues would occur for westbound vehicles on Long Bridge Street waiting to turn left into the driveway. As the driveway is located approximately 25 feet west of the intersection of Long Bridge Street/Bridgeview Street, which would be stop controlled on the east-west Long Bridge Street approaches, westbound vehicles waiting to turn left into the garage would have to wait for gaps in eastbound vehicles on Long Bridge Street that are queued at the adjacent stop sign at Bridgeview Street. If more than one westbound vehicle on Long Bridge Street is in the queue waiting to enter the garage driveway, the queue would extend into the adjacent Long Bridge Street/Bridgeview Street intersection and block traffic.

M-TR-3: Parking Garage and Intersection Queue Impacts

The easternmost driveway on Long Bridge Street (i.e., closest to Bridgeview Street) shall be restricted to right-in, right-out access during all times. Restricted access could be accomplished by placing signage as well as delineators of a sufficient length in the middle of Long Bridge Street to block left-turn access to the driveway.

The above mitigation measure would result in a prohibition of left turn movements at the easternmost parking garage driveway on Long Bridge Street at all times. Westbound vehicles on Long Bridge Street wishing to enter the parking garage would turn left at the westernmost driveway on Long Bridge Street, which is located west of the Shared Public Way. With the left turn movement prohibition, vehicles destined to the parking garage on westbound Long Bridge Street would not impact operations at the Long Bridge Street/Bridgeview Street intersection. With implementation of Mitigation Measure M-TR-3, the traffic hazard impact would be reduced to ***less-than-significant*** levels.

TRANSIT IMPACTS

MUNI TRANSIT CAPACITY UTILIZATION ANALYSIS

Impact TR-4. The proposed project would result in an adverse impact by increasing ridership by more than 5 percent on two individual Muni routes that exceed 85 percent capacity utilization under baseline conditions. (Significant and Unavoidable with Mitigation)

The assessment of transit conditions considers whether the project would cause a substantial increase in transit demand that would not be considered to be fully accommodated by available transit capacity. As described in the following section, the proposed project would result in adverse impacts to the 10 Townsend and 30 Stockton by increasing ridership by more than 5 percent on those routes that exceed 85 percent capacity utilization under baseline conditions.

Transit conditions will change in the study area over the next several years. The Central Subway, the second phase of the Third Street Light Rail Transit Project, will extend the T Third line from the Caltrain station at Fourth Street/King Street to Chinatown. The new subway connection will provide a direct rapid-transit link from the Bayshore and Mission Bay areas to SOMA, Union Square, and downtown. As part of the Central Subway initial phase, service frequencies on the Third will be increased, substantially increasing capacity. Transit Priority Lanes will be installed on 16th Street as part of the 22 Fillmore Transit Priority Project. Near-term Muni Forward facilities, equipment and/or service frequency improvements to the 10 Townsend, 12 Folsom, and 30 Stockton will also be implemented.

The proposed project would generate a significant number of transit riders during the a.m. peak hour and p.m. peak hour. A large share of the proposed project's transit trips would use the T Third line between the project and Market Street, where riders could access BART and other regional transit providers as well as walk to destinations in Downtown San Francisco. Transit riders from the proposed project would also use a number of other routes to travel to and from other San Francisco destinations including the N Judah, 10 Townsend, and 30 Stockton.

The proposed project would generate 2,451 person-trips on transit during the weekday a.m. peak hour (see Table 4.E-18, page 4.E-88) and 2,768 person-trips on transit during the weekday p.m. peak hour (see Table 4.E-19, page 4.E-89) under the High Residential Assumption. Under the High Commercial Assumption, the project would generate similar totals for transit ridership: 2,635 person-trips on transit in the a.m. peak hour (see Table 4.E-18) and 2,841 person-trips on transit in the p.m. peak hour (see Table 4.E-19). Transit trips to and from the project site would use nearby Muni routes (T Third, N Judah, 55 16th Street, 30 Stockton, 45 Union-Stockton, 10 Townsend, or 47 Van Ness) to connect to and from local destinations and regional transit providers.

The additional project-generated transit trips would follow the geographic trip distribution patterns described earlier throughout San Francisco and the region. Transit trips were assigned to the individual transit routes based on the likely origins and destinations of the trips and the available capacity on each route.

MUNI DOWNTOWN SCREENLINES, SUBCORRIDORS, AND INDIVIDUAL ROUTES

Table 4.E-22A, on the next page, and Table 4.E-23A, on page 4.E-114, present ridership and capacity utilization data for Muni screenlines and subcorridors with project-generated transit trips added to the baseline ridership for the High Residential Assumption in the a.m./p.m. peak hours. Table 4.E-22B, on page 4.E-113, and Table 4.E-23B, on page 4.E-115, present ridership and capacity utilization data for individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines under the High Residential Assumption in the a.m./p.m. peak hours.

Table 4.E-24A, on page 4.E-116, and Table 4.E-25A, on page 4.E-118, present ridership and capacity utilization data for Muni screenlines and subcorridors with project-generated transit trips added to the baseline ridership for the High Commercial Assumption in the a.m./p.m. peak hours. Table 4.E-24B, on page 4.E-117, and Table 4.E-25B, on page 4.E-119, present ridership and capacity utilization data for individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines under the High Commercial Assumption in the a.m./p.m. peak hours. As shown in the tables, with the addition of project-generated transit trips, some Muni transit subcorridors and individual routes would exceed Muni's capacity utilization standard of 85 percent.

As shown in the tables, with the addition of project-generated transit trips, some Muni transit subcorridors and individual routes would exceed Muni's capacity utilization standard of 85 percent. Capacity utilization at the four downtown Muni screenlines would range from a low of 59 percent at the southeast screenline in the p.m. peak hour to a high of 92 percent at the southwest screenline in the a.m. peak hour under baseline conditions. Both the High Residential Assumption and High Commercial Assumption would add riders to northeast, southeast, and southwest screenlines. The addition of riders from the proposed project would increase capacity utilization but would not cause any screenlines that do not operate above 85 percent capacity utilization under baseline conditions to exceed that level. However, the southwest screenline, which operates at 92 percent capacity during the a.m. peak hour under baseline conditions, would operate at 94 percent capacity during the a.m. peak hour with the addition of the proposed project. For both the High Residential Assumption and High Commercial Assumption, the addition of riders from the proposed project would increase capacity utilization on the southwest screenline from 92 to 94 percent during the a.m. peak hour. However, the addition of project trips would not increase ridership greater than 5 percent on the southwest screenline during the a.m. peak hour.

TABLE 4.E-22A. MUNI DOWNTOWN SCREENLINES – A.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Baseline (IB)			Baseline Plus Project (IB)		
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
Northeast						
Kearny/Stockton	2,273	3,157	72%	66	2,339	74%
Other lines	867	1,470	59%	101	968	66%
Screenline Total	3,140	4,627	68%	*167*	3,307	71%
Northwest						
Geary	2,302	3,763	61%	0	2,302	61%
California	1,436	2,010	71%	0	1,436	71%
Sutter/Clement	514	630	82%	0	514	82%
Fulton/Hayes	1,505	2,237	67%	0	1,505	67%
Balboa	553	1,008	55%	0	553	55%
Screenline Total	*6,310*	*9,648*	*65%*	*0*	*6,310*	*65%*
Southeast						
Third Street	1,025	3,808	27%	199	1,224	32%
Mission	2,155	2,632	82%	0	2,155	82%
San Bruno/Bayshore	1,867	2,197	**85%**	0	1,867	**85%**
Other lines	1,577	1,712	**92%**	108	1,685	**98%**
Screenline Total	*6,624*	*10,349*	*64%*	*307*	*6,931*	*67%*
Southwest						
Subway lines	6,783	7,020	**97%**	168	6,951	**99%**
Haight/Noriega	1,178	1,596	74%	0	1,178	74%
Other lines	474	560	**85%**	0	474	**85%**
Screenline Total	*8,435*	*9,176*	***92%***	*168*	*8,603*	***94%***
Muni Screenlines Total	*24,509*	*33,800*	*73%*	*642*	*25,151*	*74%*
Project-Specific Cordon						
Project-Specific Cordon Total	*4,022*	*9,090*	*44%*	*398*	*4,420*	*49%*
Individual Muni Routes at Project-Specific Cordon						
	Baseline			**Baseline Plus Project**		
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
30 Stockton IB	134	705	19%	50	184	26%
30 Stockton OB	485	705	69%	29	514	73%
45 Union/Stockton IB	223	473	47%	16	239	51%
45 Union/Stockton OB	347	473	73%	9	356	75%
N Judah IB	408	2,596	16%	92	500	19%
N Judah OB	415	2,596	16%	54	469	18%
T Third IB	1,097	3,808	29%	336	1,433	38%
T Third OB	1,931	3,808	51%	199	2,130	56%

Source: SFCTA, Baseline Forecasts. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-22B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – A.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Baseline (IB)			Baseline Plus Project (IB)		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization
Northeast/Other Lines						
E Embarcadero	63	280	23%	11	74	26%
F Market and Wharves	406	560	73%	0	406	73%
10 Townsend	304	315	**97%**	68	372	**118%**
11 Downtown Connector	94	315	30%	22	116	37%
12 Folsom Pacific	—	—	—	—	—	—
Southeast/Other Lines						
J Church	883	893	**99%**	0	883	**99%**
10 Townsend	378	315	**120%**	51	429	**136%**
12 Folsom Pacific	—	—	—	—	—	—
19 Polk	188	252	75%	0	188	75%
27 Bryant	128	252	51%	57	185	73%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-23A. MUNI DOWNTOWN SCREENLINES – P.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Baseline (OB)			Baseline Plus Project (OB)		
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
Northeast						
Kearny/Stockton	2,444	3,327	73%	65	2,509	75%
Other lines	1,134	1,750	65%	101	1,235	71%
Screenline Total	*3,578*	*5,077*	*70%*	*166*	*3,744*	*74%*
Northwest						
Geary	2,913	3,621	80%	0	2,913	80%
California	1,349	1,752	77%	0	1,349	77%
Sutter/Clement	523	630	83%	0	523	83%
Fulton/Hayes	1,544	1,838	84%	0	1,544	84%
Balboa	537	974	55%	0	537	55%
Screenline Total	*6,866*	*8,815*	*78%*	*0*	*6,866*	*78%*
Southeast						
Third Street	1,836	3,808	48%	266	2,102	55%
Mission	1,927	2,632	73%	0	1,927	73%
San Bruno/Bayshore	1,035	2,134	49%	0	1,035	49%
Other lines	1,213	1,612	75%	120	1,333	83%
Screenline Total	6,011	10,186	59%	386	6,397	63%
Southwest						
Subway lines	5,433	6,804	80%	165	5,598	82%
Haight/Noriega	1,065	1,596	67%	0	1,065	67%
Other lines	655	840	78%	0	655	78%
Screenline Total	*7,153*	*9,240*	*77%*	*165*	*7,318*	*79%*
Muni Screenlines Total	*23,608*	*33,318*	*71%*	*717*	*24,325*	*73%*
Project-Specific Cordon						
Project-Specific Cordon Total	*3,426*	*8,292*	*41%*	*530*	*3,956*	*48%*
Individual Muni Routes at Project-Specific Cordon						
	Baseline			**Baseline Plus Project**		
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
30 Stockton IB	338	470	72%	40	378	80%
30 Stockton OB	424	470	**90%**	21	445	**95%**
45 Union/Stockton IB	108	315	34%	13	121	38%
45 Union/Stockton OB	222	315	70%	44	266	84%
N Judah IB	413	2,380	17%	73	486	20%
N Judah OB	298	2,380	13%	89	387	16%
T Third IB	1,940	3,808	51%	266	2,206	58%
T Third OB	1,742	3,808	46%	321	2,063	54%

Source: SFCTA, Baseline Forecasts. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-23B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – P.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Baseline (OB)			Baseline Plus Project (OB)		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization
Northeast/Other Lines						
E Embarcadero	89	280	32%	10	99	35%
F Market and Wharves	517	840	62%	0	517	62%
10 Townsend	386	315	**123%**	72	458	**145%**
11 Downtown Connector	142	315	45%	19	161	51%
12 Folsom Pacific	—	—	—	—	—	—
Southeast/Other Lines						
J Church	642	793	81%	0	642	81%
10 Townsend	299	315	**95%**	64	363	**115%**
12 Folsom Pacific	—	—	—	—	—	—
19 Polk	168	252	67%	0	168	67%
27 Bryant	104	252	41%	56	160	63%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-24A. MUNI DOWNTOWN SCREENLINES – A.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Baseline (IB)			Baseline Plus Project (IB)		
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
Northeast						
Kearny/Stockton	2,273	3,157	72%	80	2,353	75%
Other lines	867	1,470	59%	119	986	67%
Screenline Total	*3,140*	*4,627*	*68%*	*199*	*3,339*	*72%*
Northwest						
Geary	2,302	3,763	61%	0	2,302	61%
California	1,436	2,010	71%	0	1,436	71%
Sutter/Clement	514	630	82%	0	514	82%
Fulton/Hayes	1,505	2,237	67%	0	1,505	67%
Balboa	553	1,008	55%	0	553	55%
Screenline Total	*6,310*	*9,648*	*65%*	*0*	*6,310*	*65%*
Southeast						
Third Street	1,025	3,808	27%	178	1,203	32%
Mission	2,155	2,632	82%	0	2,155	82%
San Bruno/Bayshore	1,867	2,197	**85%**	0	1,867	**85%**
Other lines	1,577	1,712	**92%**	115	1,692	**99%**
Screenline Total	*6,624*	*10,349*	*64%*	*293*	*6,917*	*67%*
Southwest						
Subway lines	6,783	7,020	**97%**	204	6,987	**100%**
Haight/Noriega	1,178	1,596	74%	0	1,178	74%
Other lines	474	560	**85%**	0	474	**85%**
Screenline Total	*8,435*	*9,176*	***92%***	*204*	*8,639*	***94%***
Muni Screenlines Total	*24,509*	*33,800*	*73%*	*696*	*25,205*	*75%*
Project-Specific Cordon						
Project-Specific Cordon Total	*4,022*	*9,090*	*44%*	*362*	*4,384*	*48%*
Individual Muni Routes at Project-Specific Cordon						
	Baseline			**Baseline Plus Project**		
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
30 Stockton IB	134	705	19%	60	194	28%
30 Stockton OB	485	705	69%	27	512	73%
45 Union/Stockton IB	223	473	47%	20	243	51%
45 Union/Stockton OB	347	473	73%	9	356	75%
N Judah IB	408	2,596	16%	111	519	20%
N Judah OB	415	2,596	16%	49	464	18%
T Third IB	1,097	3,808	29%	402	1,499	39%
T Third OB	1,931	3,808	51%	178	2,109	55%

Source: SFCTA, Baseline Forecasts. See Appendix 4-2 for transit line capacity calculations.
Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-24B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – A.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Baseline (IB)			Baseline Plus Project (IB)		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization
Northeast/Other Lines						
E Embarcadero	63	280	23%	12	75	27%
F Market and Wharves	406	560	73%	0	406	73%
10 Townsend	304	315	**97%**	82	386	**123%**
11 Downtown Connector	94	315	30%	25	119	38%
12 Folsom Pacific	—	—	—	—	—	—
Southeast/Other Lines						
J Church	883	893	**99%**	0	883	**99%**
10 Townsend	378	315	**120%**	55	433	**137%**
12 Folsom Pacific	—	—	—	—	—	—
19 Polk	188	252	75%	0	188	75%
27 Bryant	128	252	51%	60	188	75%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-25A. MUNI DOWNTOWN SCREENLINES – P.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Baseline (OB)			Baseline Plus Project (OB)		
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
Northeast						
Kearny/Stockton	2,444	3,327	73%	72	2,516	76%
Other lines	1,134	1,750	65%	111	1,245	71%
Screenline Total	*3,578*	*5,077*	*70%*	*183*	*3,761*	*74%*
Northwest						
Geary	2,913	3,621	80%	0	2,913	80%
California	1,349	1,752	77%	0	1,349	77%
Sutter/Clement	523	630	83%	0	523	83%
Fulton/Hayes	1,544	1,838	84%	0	1,544	84%
Balboa	537	974	55%	0	537	55%
Screenline Total	*6,866*	*8,815*	*78%*	*0*	*6,866*	*78%*
Southeast						
Third Street	1,836	3,808	48%	243	2,079	55%
Mission	1,927	2,632	73%	0	1,927	73%
San Bruno/Bayshore	1,035	2,134	49%	0	1,035	49%
Other lines	1,213	1,612	75%	115	1,328	82%
Screenline Total	*6,011*	*10,186*	*59%*	*358*	*6,369*	*63%*
Southwest						
Subway lines	5,433	6,804	80%	194	5,627	83%
Haight/Noriega	1,065	1,596	67%	0	1,065	67%
Other lines	655	840	78%	0	655	78%
Screenline Total	*7,153*	*9,240*	*77%*	*194*	*7,347*	*80%*
Muni Screenlines Total	*23,608*	*33,318*	*71%*	*735*	*24,343*	*73%*
Project-Specific Cordon						
Project-Specific Cordon Total	*3,426*	*8,292*	*41%*	*485*	*3,911*	*47%*
Individual Muni Routes at Project-Specific Cordon						
	Baseline			**Baseline Plus Project**		
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
30 Stockton IB	338	470	72%	36	374	80%
30 Stockton OB	424	470	**90%**	54	478	**102%**
45 Union/Stockton IB	108	315	34%	12	120	38%
45 Union/Stockton OB	222	315	70%	45	267	85%
N Judah IB	413	2,380	17%	67	480	20%
N Judah OB	298	2,380	13%	103	401	17%
T Third IB	1,940	3,808	51%	243	2,183	57%
T Third OB	1,742	3,808	46%	373	2,115	56%

Source: SFCTA, Baseline Forecasts. See Appendix 4-2 for transit line capacity calculations.
Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-25B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – P.M. PEAK-HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Baseline (OB)			Baseline Plus Project (OB)		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization
Northeast/Other Lines						
E Embarcadero	89	280	32%	9	98	35%
F Market and Wharves	517	840	62%	0	517	62%
10 Townsend	386	315	**123%**	84	470	**149%**
11 Downtown Connector	142	315	45%	18	160	51%
12 Folsom Pacific	—	—	—	—	—	—
Southeast/Other Lines						
J Church	642	793	81%	0	642	81%
10 Townsend	299	315	**95%**	64	363	**115%**
12 Folsom Pacific	—	—	—	—	—	—
19 Polk	168	252	67%	0	168	67%
27 Bryant	104	252	41%	51	155	62%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

Some subcorridors within the Muni downtown screenlines would exceed 85 percent capacity utilization. Specifically, the "other lines" subcorridor within the southeast screenline would operate at 98 percent under the High Residential Assumption and 99 percent under the High Commercial Assumption in the a.m. peak hour. The addition of project trips to this subcorridor would contribute 6.4 percent for the High Residential Assumption and 6.8 percent for the High Commercial Assumption scenario in the a.m. peak hour. This would be a *significant* impact. As noted below, additional analysis of the southeast "other lines" subcorridor indicates that the impact is due to conditions on the 10 Townsend line.

Table 4.E-22B, page 4.E-113; Table 4.E-23B, page 4.E-115; Table 4.E-24B, page 4.E-117; and Table 4.E-25B, page 4.E-119, present ridership and capacity utilization data for individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines for both the High Residential Assumption and High Commercial Assumption scenarios. The assessment of the "other lines" subcorridor of the southeast screenline indicates that the J Church line would exceed the 85 percent threshold during the a.m. peak hour, but the project would add less than 5 percent ridership to this line.

An evaluation of the individual Muni routes within the southeast "other lines" subcorridor indicates that the 10 Townsend line would operate at 136 percent under the High Residential Assumption and 137 percent under the High Commercial Assumption in the a.m. peak hour with the addition of project transit trips. The addition of project trips to the 10 Townsend line would contribute 11.9 percent for the High Residential Assumption and 12.7 percent for the High Commercial Assumption scenario in the a.m. peak hour. The 10 Townsend line would also exceed the 85 percent utilization threshold during the p.m. peak hour for both the High Residential Assumption and the High Commercial Assumption. This would be a significant impact on the 10 Townsend route because the route would exceed 85 percent utilization, and the project would add more than 5 percent to the baseline ridership.

10 TOWNSEND ROUTE

The proposed project's High Residential Assumption would add 51 additional riders to the inbound 10 Townsend line and 68 riders to the outbound 10 Townsend line during the am peak hour. The proposed project High Residential Assumption would add 72 additional riders to the inbound 10 Townsend line and 64 riders to the outbound 10 Townsend line during the pm peak hour. When the less than 5 percent contribution that is considered ***less than significant*** under the significance threshold is subtracted, the High Residential Assumption impact would generate a need for an increase in transit capacity for 28 additional riders to the inbound 10 Townsend line and 51 riders to the outbound 10 Townsend line during the am peak hour. When the less than 5 percent contribution that is considered ***less than significant*** under the significance threshold is subtracted, the High Residential Assumption impact would generate a need for an increase in transit capacity 44 riders to the inbound 10 Townsend line and 48 riders

to the outbound 10 Townsend line during the pm peak hour. As such, the proposed project would cause a substantial increase in the transit ridership of the 10 Townsend under both Scenarios. While there may be transit capacity by some nearby adjacent lines, this is not consistent throughout the entire 10 Townsend route and is based on origins and destinations of the transit user. Therefore, adjacent transit lines would not be considered to be able to fully accommodate the increase in transit demand associated with the proposed project.

The proposed project's High Commercial Assumption would add 55 additional riders to the inbound 10 Townsend line and 82 riders to the outbound 10 Townsend line during the am peak hour. The proposed project's High Commercial Assumption would add 84 additional riders to the inbound 10 Townsend line and 64 riders to the outbound 10 Townsend line during the pm peak hour. When the less than 5 percent contribution that is considered ***less than significant*** under the significance threshold is subtracted, the High Commercial Assumption impact would generate a need for an increase in transit capacity for 31 additional riders to the inbound 10 Townsend line and 65 riders to the outbound 10 Townsend line during the am peak hour. When the less than 5 percent contribution that is considered ***less than significant*** under the significance threshold is subtracted, the High Commercial Assumption impact would generate a need for an increase in transit capacity for 54 riders to the inbound 10 Townsend line and 48 riders to the outbound 10 Townsend line during the pm peak hour.

The 10-Townsend line under baseline conditions without the project exceeds Muni's 85 percent capacity utilization threshold. The proposed project's High Residential Assumption and High Commercial Assumption would increase ridership on the Muni 10 Townsend line in the am and pm peak hours that would result in more than a 5 percent contribution to exceedances of Muni's 85 percent capacity utilization threshold; this would be a **significant impact** under CEQA.

M-TR-4.1: Provide Fair-Share Contribution to Improve 10 Townsend Line Capacity

Upon completion and occupancy of Phase 1 of the proposed project and upon completion and occupancy of each subsequent phase as defined in the Development Agreement the project sponsor shall obtain from SFMTA the current ridership on the 10 Townsend and conduct an assessment of the capacity utilization at the screenline's Maximum Load Point (MLP) for weekday AM and PM peak hour conditions.

If the capacity utilization exceeds 85 percent, a fair share contribution payment shall be made to SFMTA by the project sponsor, calculated as further provided in a Transit Mitigation Agreement described below, and attached to or incorporated into the Development Agreement. Such payment shall be adjusted, as appropriate, to the extent, if any, that the proposed project reflects either the High Residential Assumption or High Commercial Assumption based upon all

phases of the proposed project that have been completed up to such date. Accordingly, the fair share contributions by phase may differ by scenario because the number of transit riders varies due to different mixes of land use.

If the capacity utilization based on SFMTA's ridership data is less than 85 percent, then the project sponsor's fair share payment for that phase shall be $0 and the process will repeat at the next subsequent phase**.** Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts.

The project sponsor shall enter into a Transit Mitigation Agreement with the SFMTA pursuant to which the project sponsor will make a fair share contribution to the cost of providing additional bus service or otherwise improving service on the 10 Townsend. The fair share contribution as documented in the Transportation Impact Study for the proposed project shall not exceed the following amounts, in total across all phases:

a. $991,230 for High Commercial Assumption

b. $782,706 for High Residential Assumption

SFMTA will determine whether adding bus(es) or other measures are more desirable to increase capacity along the route and will use the funds provided by the project sponsor to implement the most desirable measure, which may include but is not limited to the following measures:

1. Convert to using higher-capacity vehicles on the 10 Townsend route. In this case, the project sponsors fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.

2. Instead of adding more buses to a congested route, increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements.

3. Increase capacity along the corridor by adding a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles

Implementing transit line improvements as identified in Mitigation Measure M-TR-4.1 are expected to allow Muni to maintain transit headways, and would reduce the proposed project's impact on the 10 Townsend to ***less-than-significant*** levels. However, because the method and total cost of providing additional service and SFMTA's ability to implement improvements is uncertain, the proposed project's impact would be considered to be ***significant and unavoidable with mitigation***.

The 10 Townsend is a top SFMTA priority, identified as part of Muni Forward. The SFMTA is committed to augmentation on this route as soon as feasible. The operations of the 10 Townsend Muni line can only be improved by increasing its capacity, transit frequency, and/or reducing delay through transit priority treatments along the line, which requires providing more buses serving this route or transit enhancements on the line. The SFMTA is committed to augmenting and maintaining the fleet and related facilities to ensure service accommodates additional ridership on lines identified as having capacity impacts identified as capacity mitigation, subject to availability of funding and consistent with service priorities. While SFMTA has not at this time determined the method it would use to increase capacity on the 10 Townsend, SFMTA has determined that the cost of providing additional bus capacity or improving service is a reasonable method for determining the cost of mitigation. However, the method and total cost of providing additional service on this line is not known at this time. Also, SFMTA would be responsible for implementing improvements and its ability to do so is uncertain. Therefore, the effectiveness of fair-share mitigation is unknown.

MUNI PROJECT-SPECIFIC CORDON

The project-specific transit cordon was established to measure the number of transit trips between the proposed project and the San Francisco Financial District through the SOMA neighborhood. The project-specific cordon encompasses transit routes that cross Townsend Street, from Fifth Street to Embarcadero and/or from Fifth Street to between Townsend Street and Berry Street.

The project-specific cordon would operate at 44 percent utilization in the a.m. peak hour and 41 percent utilization in the p.m. peak hour under baseline conditions. The addition of riders from the proposed project would increase capacity utilization to the 47 to 49 percent range under the High Commercial Assumption and High Residential Assumption.

Capacity utilization for the four individual Muni routes that were evaluated (i.e., 30 Stockton, 45 Union/Stockton, N Judah, T Third) would range from 13 to 90 percent under baseline conditions. The addition of ridership from the proposed project would increase capacity utilization to a range of 16 to 102 percent under the High Commercial Assumption and High Residential Assumption. The 30 Stockton OB would operate at 102 percent utilization under the High Commercial

Assumption in the p.m. peak hour, with the project causing an 11.2 percent increase in riders. This would be a *significant* impact on the 30 Stockton route under the High Commercial Assumption because the route would exceed 85 percent utilization, and the project would add more than 5 percent to the baseline ridership.

30 STOCKTON ROUTE

The proposed project's High Commercial Assumption would add 54 additional riders to the outbound 30 Stockton line during the pm peak hour. When the less than 5 percent contribution that is considered ***less than significant*** under the significance threshold is subtracted, the High Commercial Assumption impact would generate a need for an increase in transit capacity for 32 additional riders to the outbound 30 Stockton line during the pm peak hour. As such, the proposed project would cause a substantial increase in the transit ridership of the 30 Stockton line under the High Commercial Assumption. While there may be transit capacity by some nearby adjacent lines, this is not consistent throughout the entire 30 Stockton route and is based on origins and destinations of the transit user. Therefore, adjacent transit lines would not be able to fully accommodate the increase in transit demand associate with the proposed project.

The 30 Stockton line under baseline conditions without the project exceeds Muni's 85 percent capacity utilization threshold. The proposed project's High Commercial Assumption would increase ridership on the Muni 30 Stockton line in the pm peak hours that would result in more than a 5 percent contribution to exceedances of Muni's 85 percent capacity utilization threshold; this would be a significant impact under CEQA.

M-TR-4.2: Provide Fair-Share Contribution to Improve 30 Stockton Line Capacity Proposed Project

Upon completion and occupancy of Phase 1 of the proposed project and upon completion and occupancy of each subsequent phase as defined in the Development Agreement, the project sponsor shall obtain from SFMTA the current ridership on the 30 Stockton and conduct an assessment of the capacity utilization at the Maximum Load Point (MLP) on the route between the proposed project and Market Street for weekday PM peak hour conditions.

If the capacity utilization exceeds 85 percent, a fair share contribution payment shall be made by the project sponsor, calculated as further provided in Transit Mitigation Agreement described below, and attached to or incorporated into the Development Agreement. Such payment shall be adjusted, as appropriate, to the extent, if any, that the proposed project reflects either the High Commercial Assumption or the High Residential Assumption, the latter of which does not require any fair share contribution. The fair share contributions differ by scenario because the number of transit riders varies due to different mixes of land use. If the capacity utilization based on SFMTA's ridership data is less than 85 percent,

then the project sponsor's fair share payment for that phase shall be $0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts.

The project applicant shall enter into a Transit Mitigation Agreement with the SFMTA pursuant to which the project applicant will make a fair share contribution to the cost of providing additional bus service or otherwise improving service on the 30 Stockton. The fair share contribution as documented in the Transportation Impact Study for the proposed project shall not exceed the following amounts, in total across all phases:

a. $417,691 for High Commercial Assumption

b. $0 for High Residential Assumption

SFMTA will determine whether adding bus(es) or other measures are more desirable to increase capacity along the route and will use the funds provided by the project sponsor to implement the most desirable measure, which may include but is not limited to the following measures:

1. Convert to using higher-capacity vehicles on the 30 Stockton route. In this case, the project sponsors fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.

2. Instead of adding more buses to a congested route, increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements.

3. Increase capacity along the corridor by adding a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles.

Implementing transit line improvements as identified in Mitigation Measure M-TR-4.2 are expected to allow Muni to maintain transit headways, and would reduce the proposed project's impact on the 30 Stockton to ***less-than-significant*** levels. However, because the method and

total cost of providing additional service and SFMTA's ability to implement improvements is uncertain, the proposed project's impact under the High Commercial Assumption would be considered to be ***significant and unavoidable with mitigation***.

The 30 Stockton is a top SFMTA priority, identified as part of Muni Forward. The SFMTA is committed to augmentation on this route as soon as feasible. The operations of the 30 Stockton Muni line can only be improved by increasing its capacity, transit frequency, and/or reducing delay through transit priority treatments along, which requires providing more buses serving this route or transit enhancements on the line. The SFMTA is committed to augmenting and maintaining the fleet and related facilities to ensure service accommodates additional ridership on lines identified as having capacity impacts identified as capacity mitigation, subject to availability of funding and consistent with service priorities. While SFMTA has not at this time determined the method it would use to increase capacity on the 30 Stockton, SFMTA has determined that the cost of providing additional bus capacity or improving service is a reasonable method for determining the cost of mitigation. However, the method and total cost of providing additional service on this line is not known at this time. Also, SFMTA would be responsible for implementing improvements and its ability to do so is uncertain. Therefore, the effectiveness of fair-share mitigation is unknown.

REGIONAL TRANSIT CAPACITY UTILIZATION ANALYSIS

Impact TR-5. The project would not cause significant impacts on regional transit routes. (Less than Significant)

Tables 4.E-26 and 4.E-27, on the following page, present ridership and capacity utilization data for regional screenlines with project-generated transit trips added to baseline ridership for the High Residential Assumption in the a.m./p.m. peak periods. Tables 4.E-28 and 4.E-29, page 4.E-128, present the ridership and capacity utilization at regional screenlines with project-generated transit trips added to baseline ridership for the High Commercial Assumption in the a.m./p.m. peak periods.

REGIONAL TRANSIT ANALYSIS – HIGH RESIDENTIAL ASSUMPTION

Development under the High Residential Assumption would generate 298 transit person-trips from the East Bay, 52 transit person-trips from the North Bay, and 265 transit person-trips from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour, the High Residential Assumption would generate 284 transit person-trips to the East Bay, 52 transit person-trips to the North Bay, and 271 transit person-trips to the South Bay. The East Bay regional transit screenline would exceed capacity utilization standards in the a.m. peak hour and p.m. peak hour under baseline conditions. The proposed project would increase ridership at the East Bay regional transit screenline by 1 percent in the a.m. peak hour

TABLE 4.E-26. REGIONAL TRANSIT SCREENLINES – A.M. PEAK HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Baseline (Inbound)			Baseline Plus Project (Inbound)		
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
East Bay						
BART	28,000	25,680	**109%**	253	28,253	**110%**
AC Transit	1,596	2,829	56%	30	1,626	57%
Ferries	818	1,170	70%	15	833	71%
Screenline Total	*30,414*	*29,679*	***102%***	*298*	*30,712*	***103%***
North Bay						
Golden Gate Transit Bus	1,344	2,543	53%	31	1,375	54%
Ferries	1,088	1,959	56%	21	1,109	57%
Screenline Total	*2,432*	*4,502*	*54%*	*52*	*2,484*	*55%*
South Bay						
BART	16,000	21,400	75%	199	16,199	76%
Caltrain	2,258	3,100	73%	53	2,311	75%
SamTrans	266	520	51%	13	279	54%
Screenline Total	*18,524*	*25,020*	*74%*	*265*	*18,789*	*75%*
Regional Screenlines Total	*51,370*	*59,201*	*87%*	*615*	*51,985*	*88%*

Source: San Francisco Planning Department. 2015. *Transit Data for Transportation Impact Studies*. May. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

TABLE 4.E-27. REGIONAL TRANSIT SCREENLINES – P.M. PEAK HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Baseline (Outbound)			Baseline Plus Project (Outbound)		
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
East Bay						
BART	27,000	25,680	**105%**	242	27,242	**106%**
AC Transit	2,297	3,926	59%	28	2,325	59%
Ferries	813	1,615	50%	14	827	51%
Screenline Total	*30,110*	*31,221*	*96%*	284	30,394	*97%*
North Bay						
Golden Gate Transit Bus	1,399	2,817	50%	31	1,430	51%
Ferries	973	1,959	50%	21	994	51%
Screenline Total	*2,372*	*4,776*	*50%*	52	2,424	*51%*
South Bay						
BART	15,000	21,400	70%	203	15,203	71%
Caltrain	2,472	3,100	80%	54	2,526	81%
SamTrans	147	320	46%	14	161	50%
Screenline Total	*17,619*	*24,820*	*71%*	271	17,890	*72%*
Regional Screenlines Total	*50,101*	*60,817*	*82%*	607	50,708	*83%*

Source: San Francisco Planning Department. 2015. *Transit Data for Transportation Impact Studies*. May. See **Appendix 4-2** for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

TABLE 4.E-28. REGIONAL TRANSIT SCREENLINES – A.M. PEAK HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Baseline (Inbound)			Baseline Plus Project (Inbound)		
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
East Bay						
BART	28,000	25,680	**109%**	301	28,301	**110%**
AC Transit	1,596	2,829	56%	35	1,631	58%
Ferries	818	1,170	70%	18	836	71%
Screenline Total	*30,414*	*29,679*	***102%***	*354*	*30,768*	***104%***
North Bay						
Golden Gate Transit Bus	1,344	2,543	53%	40	1,384	54%
Ferries	1,088	1,959	56%	27	1,115	57%
Screenline Total	*2,432*	*4,502*	*54%*	*67*	*2,499*	*56%*
South Bay						
BART	16,000	21,400	75%	196	16,196	75%
Caltrain	2,258	3,100	73%	52	2,310	75%
SamTrans	266	520	51%	13	279	54%
Screenline Total	*18,524*	*25,020*	*74%*	*261*	*18,785*	*75%*
Regional Screenlines Total	*51,370*	*59,201*	*87%*	*682*	*52,052*	*88%*

Source: San Francisco Planning Department. 2015. *Transit Data for Transportation Impact Studies*. May. See **Appendix 4-2** for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

TABLE 4.E-29. REGIONAL TRANSIT SCREENLINES – P.M. PEAK HOUR BASELINE AND BASELINE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Baseline (Outbound)			Baseline Plus Project (Outbound)		
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**
East Bay						
BART	27,000	25,680	**105%**	282	27,282	**106%**
AC Transit	2,297	3,926	59%	33	2,330	59%
Ferries	813	1,615	50%	17	830	51%
Screenline Total	*30,110*	*31,221*	*96%*	*332*	*30,442*	*98%*
North Bay						
Golden Gate Transit Bus	1,399	2,817	50%	39	1,438	51%
Ferries	973	1,959	50%	26	999	51%
Screenline Total	*2,372*	*4,776*	*50%*	65	2,437	51%
South Bay						
BART	15,000	21,400	70%	195	15,195	71%
Caltrain	2,472	3,100	80%	52	2,524	81%
SamTrans	147	320	46%	13	160	50%
Screenline Total	*17,619*	*24,820*	*71%*	*260*	*17,879*	*72%*
Regional Screenlines Total	*50,101*	*60,817*	*82%*	*657*	*50,758*	*83%*

Source: San Francisco Planning Department. 2015. *Transit Data for Transportation Impact Studies*. May. See **Appendix 4-2** for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

and 1 percent in the p.m. peak hour. Although the BART line to the East Bay would exceed its capacity utilization threshold in the a.m. and p.m. peak hours, the proposed project would contribute less than 5 percent to total ridership on the East Bay regional screenline. Thus, the High Residential Assumption would result in a less-than-significant impact on regional transit service under baseline plus-project conditions. No mitigation is necessary.

REGIONAL TRANSIT ANALYSIS – HIGH COMMERCIAL ASSUMPTION

Development under the High Commercial Assumption would generate 354 transit person-trips from the East Bay, 67 transit person-trips from the North Bay, and 261 transit person-trips from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour, the proposed project would generate 332 transit person-trips to the East Bay, 65 transit person-trips to the North Bay, and 260 transit person-trips to the South Bay. The East Bay regional transit screenlines would exceed capacity utilization standards in the a.m. peak and p.m. peak hours under baseline conditions. The proposed project would increase ridership at the East Bay regional transit screenline by 2 percent in the a.m. peak hour and 2 percent in the p.m. peak hour. Although the BART line to the East Bay would exceed its capacity utilization threshold in the a.m. and p.m. peak hours, the proposed project would contribute less than 5 percent to total ridership on the East Bay regional screenline. Thus, the High Commercial Assumption would result in a ***less-than-significant*** impact on regional transit service under baseline plus-project conditions. No mitigation is necessary

TRANSIT DELAY ANALYSIS

Impact TR-6. The project would result in an adverse impact related to a substantial increase in transit delays on Third Street between Channel Street and Mission Rock Street. (Significant and Unavoidable with Mitigation)

The following assessment addresses whether added project traffic could affect transit lines such as the T Third on Third Street by causing transit delays due to intersection congestion or due to queues of vehicle traffic at intersections and/or at entrances to the two proposed parking garages.

The proposed project would include an aboveground parking structure on Block D2 with 2,300 spaces as well as an underground parking structure with 700 parking spaces under Mission Rock Square. A traffic signal would be installed at the new intersection of Third Street/Exposition Street, with all movements allowed including the southbound left turn under non-event conditions. During Giants games and other major events at AT&T Park, southbound left-turn movements for vehicles would be restricted.

The Mission Rock Square underground garage would have a ramp with a single inbound and a single outbound lane connecting to the Third Street/Channel Street intersection on the west side of the garage and a ramp with a single outbound lane connecting to the Terry A. Francois Boulevard/Channel Lane intersection on the east side of the garage. The ramp and single

outbound lane to the Terry A. Francois Boulevard/Channel Lane intersection on the east side of the garage would be closed at all times, except during a Giants game or major event at AT&T Park. Attendees at Giants games or major AT&T Park events would not park in the underground garage. During events, the exit ramp on the east side of the garage would be open to allow non-event parkers in the underground garage to exit onto Terry A. Francois Boulevard and thereby reduce traffic volumes on Third Street.

The Block D2 parking structure would have six access points: two driveways on the north side of Mission Rock Street, two driveways on the west side of Bridgeview Street, and two driveways on the south side of Long Bridge Street. A total of 2,000 of the 2,300 spaces in the Block D2 garage would be reserved for use by Giants game attendees on game days. The westernmost driveway on Mission Rock Street and the southernmost driveway on Bridgeview Street to the Block D2 garage would be closed prior to Giants games. Under post-game conditions, the westernmost driveway on Mission Rock Street and the northernmost driveway on Bridgeview Street to the Block D2 garage would be closed. PCOs would be present at the following six locations in and/or adjacent to the project site to manage the flow of vehicles and pedestrians before and after a Giants game:

- Mission Rock Street at westernmost Block D2 garage driveway, Bridgeview Street intersection, and Terry A. Francois Boulevard intersection
- Long Bridge Street at westernmost Block D2 garage driveway and Bridgeview Street intersection
- Exposition Street at Shared Public Way crossing

About half of the vehicle trips to and from the project site from the north are forecast to use Third Street, Fourth Street, and Embarcadero to access the project garages at Channel Street and Mission Rock Street. Rail lines on these streets, including the N Judah line, operate in an exclusive right-of-way. Bus Route 55, which currently operates along 16th Street and Third Street, and the future 22 Fillmore extension (which will replace the 55 when completed) will be served in the future by dedicated transit lanes on 16th Street. The multiple bus routes along Third Street, between Townsend Street and Howard Street at the north end of the study area, are served by an existing exclusive bus lane on Third Street. No transit service is currently provided on Mariposa Street between Third Street and US 101. Because transit lines that are forecast to be most heavily used by project vehicle trips are located along the streets that include dedicated transit lanes under baseline conditions, the project would not have a significant impact on transit delay on the aforementioned routes, based on added vehicle trips.

The queuing assessment for the Mission Rock Square underground garage and the Block D2 aboveground garage was performed for three time periods: the a.m. peak hour, the p.m. peak hour, and the 5:00–6:00 p.m. peak hour with a weekday evening Giants game at AT&T Park. The analysis results were similar for the High Residential Assumption and the High Commercial Assumption because the number of vehicle trips generated by the two scenarios is similar.

The garage queue assessment is based on inbound service flow rates for the garage driveways, ranging from 300 to 800 vehicles per hour per lane, depending on the mix of users and the proposed type of parking control. An entering service flow rate of 300 vehicles per hour is the design hourly capacity for a driveway where cash is accepted, 520 vehicles per hour for a ticket dispenser with a gate, and a higher rate of 800 vehicles per hour for an express driveway with automatic vehicle identification, resulting in an hourly service rate combined of 900 vehicles per hour for the driveway with three entrance lanes on Mission Rock Street that would accept cash and 800 vehicles per hour for the express driveway for season ticket holders with parking passes on Bridgeview Street.

The parking garage under Mission Rock Square would be accessed via the Third Street/Channel Street intersection on the west and the Terry A. Francois Boulevard/Channel Lane intersection on the east. Because the single outbound lane to the Terry A. Francois Boulevard/Channel Lane intersection would be closed at all times, except during a Giants game or major event at AT&T Park, the queue evaluation for the Mission Rock Square underground garage focused on the potential effect of queues on the Third Street/Channel Street intersection. There would be storage capacity for approximately eight inbound vehicles on the ramp from the Third Street/Channel Street intersection down to the underground garage entry/exit gates. This queue storage length would be enough to serve queues during all study periods without affecting Third Street. As such, the Mission Rock Square underground garage queuing would not substantially delay transit.

The Block D2 aboveground garage would have two driveways on Mission Rock Street, two driveways on Long Bridge Street, and two driveways on Bridgeview Street. The easternmost driveway on Mission Rock Street would have three lanes, each of which could be modified as needed throughout the day to serve either inbound or outbound flows; all other driveways would have two lanes that could be modified throughout the day to serve either inbound or outbound flows. The directionality of the parking garage driveway lanes would be modified during pre-event and post-event conditions, when most of the driveway lanes would be modified to serve inbound flows during pre-event conditions and most would be modified to serve outbound flows during post-event conditions. The queue assessment focuses on the potential effect of queues resulting from inbound vehicles accessing the Block D2 aboveground garage as well as the effect of queues on the approaches to the Third Street/Mission Rock Street intersection on the operation of the T Third line on Third Street and Channel Street.

During the a.m. peak hour, queues for the eastbound left turn into the westernmost driveway on Mission Rock Street (i.e., the driveway closest to Third Street) would extend beyond the 60 feet of available queue space between the westernmost driveway and Third Street and could delay operations of the T Third line. Based on the proposed driveway configurations (i.e., time-specific driveway closures and number of inbound vs. outbound lanes) and the proposed type of driveway parking control for the Block D2 garage, queues would not extend

west to Third Street during the p.m. peak hour or during a weekday p.m. peak hour prior to a Giants game. Maximum westbound queues at the Third Street/Mission Rock Street traffic signal would extend up to 250 feet during the a.m. peak hour, providing a potential barrier for eastbound left turn movements into the westernmost driveway (which would have a Keep Clear Zone) on Mission Rock Street and exacerbating queue lengths. Maximum westbound queues at the Third Street/Mission Rock Street traffic signal would extend up to 730 feet during the p.m. peak, potentially blocking access at times to the easternmost driveway on Mission Rock Street, which does not have a Keep Clear zone. The queue impacts at the Mission Rock Street driveways for the Block D2 garage would cause a significant transit delay impact during the a.m. peak hour. Queues impacts may also occur during the p.m. peak hour, not due to capacity constraints of the parking garage driveways, but due to the potential for queues of westbound traffic on Mission Rock Street (i.e., from the traffic signal at Third Street/Mission Rock Street) blocking access to garage driveways.

The queue in the southbound left-turn pocket at the Third Street/Mission Rock Street intersection would exceed the length of the existing left-turn pocket during the a.m. peak hour and during peak events. The current left-turn pocket length is approximately 125 feet. The maximum left-turn queue length for the study scenarios is 325 feet. During the a.m. peak hour, vehicles destined for the southbound left-turn pocket would queue into the southbound through lanes of Third Street since the left turn pocket length is currently not adequate to serve the left turn demand with proposed project traffic levels. Queues in the left-turn pocket that extend into the through lane could extend the overall southbound queue beyond approximately 425 feet and could affect the T Third line at the Third Street/Channel Street intersection. The queue impacts at the southbound left-turn lane at the Third Street/Mission Rock Street intersection would cause a significant transit delay impact during the a.m. peak hour.

M-TR-6: Parking Garage and Intersection Queue Impacts on Transit Delay

A. The westernmost driveway on Mission Rock Street (i.e., closest to Third Street) shall be restricted to right-in, right-out access and closed during large AT&T Park events. Restricted access could be accomplished by placing signage as well as delineators of a sufficient length between the westbound through and left-turn lanes on Mission Rock Street to block left-turn access to the driveway.

B. A "keep clear" zone shall be provided in front of the easternmost driveway on Mission Rock Street (i.e., closest to Bridgeview Street) to prevent westbound queues at the Third Street/Mission Rock traffic signal from blocking inbound access to the driveway.

C. The southbound left-turn lane at the Third Street/Mission Rock Street intersection shall be restriped to extend the length of the left-turn lane to 350 feet. Advance traffic signal detection equipment shall be installed at the end of the newly striped left-turn pocket to detect when queues fill up the left-

turn pocket and extend north to the end of the pocket near the Third Street/Channel Street intersection, allowing additional green time to be allocated to the southbound left-turn movement at the Third Street/Mission Rock Street traffic signal.

D. Wayfinding signs including Static and Variable Message Signs will be installed to provide directions to the parking garages and to provide traffic alerts, messages, and alternate driving routes for drivers traveling to the Block D2 aboveground garage, to destinations in the vicinity, or through the area. Four High Visibility Static Signs will be installed, three on the approaches to the Third Street/Mission Rock Street intersections (for southbound, eastbound and northbound directions) and one for northbound drivers on Terry A. Francois Boulevard, south of Mission Rock Street. One permanent Variable Message Sign shall be installed for southbound drivers on Third Street, between King Street and Berry Street.

E. The project sponsor shall enter into an Event Mitigation Agreement with the SFMTA that provides for Parking Control Officers (PCOs) to manage traffic within the project site and adjacent to the proposed project's parking garages on Exposition Street (between Third Street and the Shared Public Way) during all AT&T Park events and on-site events with 15,000 or more attendees.

F. The site's TDM coordinator shall be a member of the Mission Bay Ballpark Transportation Coordination Committee and provide notification prior to the start of any on-site event that would overlap with an event at AT&T Park or the Warriors arena.

G. Traffic destined for the proposed project's parking garages will be monitored by the owner/operator during all AT&T Park events and on-site events with 15,000 or more attendees, and periodically during weekday a.m. and p.m. peak hours, to ensure that garage access queues do not affect operations of the T Third transit line. Action will be taken by the Mission Rock Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff, and/or PCOs assigned to event traffic management to implement real-time traffic management strategies (i.e., alternative traffic routing, temporal parking pricing, enhanced garage driveway controls, etc.) to reduce vehicle garage access queues so they do not affect operations of the T Third line.

H. If the SFMTA Director, or his or her designee, receives information that a recurring queue that could affect the operation of the T Third line is imminent or present, SFMTA shall notify the property owner in writing. Upon request, the owner/operator shall hire a qualified transportation

consultant to evaluate the conditions at the site for no less than 7 days. The consultant shall prepare a monitoring report to be submitted to SFMTA for review. If SFMTA determines that a recurring queue does exist, the facility owner/operator shall have 45 days from the date of the written determination to abate the excessive recurring queue. Approaches to queue abatement could include but are not limited to: changing parking access and revenue collection system (PARCS) technology to process vehicles more rapidly, adjusting the layout of the garage's ground floor to accommodate more queuing vehicles within the garage, implementing peak-period surge pricing to encourage garage access and egress outside of times with recurrent excessive queues; installing additional variable message signage further upstream from the site to direct drivers to garage access routes away from affected intersections; and/or closing, limiting or controlling Mission Rock Street access from Third Street during times with excessive recurrent queuing and redirecting garage-bound traffic to Terry A. Francois Boulevard.

Implementation of Mitigation Measure M-TR-6 would resolve transit delay impacts to being less than significant. However, at this time they may not be considered to fully resolve transit delay impacts because, and to the extent that, implementation of some of components of the mitigation (i.e., approval of restriping on Third Street and entering into an Event Management Agreement with the project sponsor to allocate PCOs on site), require SFMTA Board approval, and such approval is currently considered uncertain. Thus, based upon such current uncertainty of full implementation of Mitigation Measure M-TR-6, the proposed project's transit delay impacts would be considered to remain ***significant and unavoidable with mitigation***.

PEDESTRIAN IMPACTS

The following assessment of pedestrian conditions initially addresses on-site pedestrian facilities and subsequently addresses off-site pedestrian facilities. The evaluation considers whether the proposed pedestrian facilities would be adequate with respect to accommodating pedestrian trips and whether any conditions that would be hazardous to pedestrians would be created. The analysis of pedestrian impacts also considers whether the addition of project vehicle trips would have an impact on the pedestrian network. The assessment of potential hazards on the pedestrian network focuses on whether vehicle queues generated by project vehicle trips to the project's parking garages would affect pedestrians at intersections and garage access points.

Impact TR-7. The proposed project would have a substantial adverse effect on pedestrian travel by creating potentially hazardous conditions for pedestrians adjacent to the Block D2 parking structure. (Less than Significant with Mitigation)

The proposed project includes numerous sidewalk network and traffic control improvements that would improve and define the pedestrian environment adjacent to the project site. The project proposes several new internal streets that will enhance walkability including pedestrian paseos, which restrict nonemergency vehicle access, as well as a Shared Public Way, a multimodal zone which prioritizes safe pedestrian movement per the San Francisco Better Streets manual. Twelve- to 15-foot-wide sidewalks are proposed throughout the site, including new internal streets and the existing streets on the project perimeter. The proposed sidewalk network will comply with City standards for sidewalks on residential streets per the San Francisco Better Streets Plan and will accommodate the pedestrian trips generated by the project. All new sidewalks would include new landscaping on all streets to improve the pedestrian experience.

As presented in Table 4.E-18, page 4.E-88, and Table 4.E-19, page 4.E-89, the proposed project would generate 1,572 non-auto, non-transit trips in the a.m. peak hour and 2,678 during the weekday p.m. peak hour with the High Residential Assumption. The proposed project would generate 1,705 non-auto, non-transit trips in the a.m. peak hour and 2,816 during the weekday p.m. peak hour with the High Commercial Assumption. Many of these trips will be pedestrian trips. In addition, the proposed project would generate 2,451 transit trips in the a.m. peak hour and 2,768 transit trips in the p.m. peak hour with the High Residential Assumption. The proposed project would generate 2,635 transit trips in the a.m. peak hour and 2,841 transit trips in the p.m. peak hour with the High Commercial Assumption. Many of the transit trips also end or begin with a walking trip to get to or from the transit stop. Non-auto, non-transit trips include walking as well as bicycle, motorcycle, taxi, and other transportation modes as well as internal trips.

Pedestrian trips generated by the proposed project would include walking trips to and from the local and regional transit stops, as well as walking trips to and from nearby complementary land uses, including AT&T Park. A significant number of pedestrian trips would also be between the on-site parking structures and internal project uses as well as AT&T Park and other events at the site.

Trips from BART and Muni would arrive at the project site primarily from the T-Third light-rail line, providing direct access to Market Street via the Central Subway. The T-Third station at Third Street and Mission Rock Street would serve the project site directly. The most direct route for pedestrians walking between project uses and this stop would be via Third Street, Long Bridge Street, and the Shared Public Way. The existing traffic signal at Third Street and Mission Rock Street would provide pedestrian phases, allowing for the safe passage of pedestrians between the median stop and the east side of Third Street. Enhanced pedestrian crosswalks would be installed on Third Street at the intersections of Mission Rock Street and Long Bridge

Street. The project would construct a landscaped 12-foot-wide sidewalk on the east side of Third Street between Mission Rock Street and the Third Street Bridge as well as 15-foot-wide sidewalks on both sides of Long Bridge Street.

The Shared Public Way would be a north–south pedestrian promenade, designed to connect Long Bridge Street and the 2,300-space Block D2 garage at the southern end of the project site to the planned China Basin Park and the Third Street Bridge across China Basin, which provides access to events at AT&T Park and the SOMA neighborhood. No driveways would be located along the Shared Public Way. Raised intersections, designed to facilitate north–south pedestrian travel along the Shared Public Way, would be constructed at the junction of the Shared Public Way with stop-controlled intersections at Long Bridge Street and Exposition Street. Vehicle traffic, with the exception of emergency vehicles, would be prohibited along the Shared Public Way during major events at AT&T Park.

An event at the China Basin Park Great Lawn or Mission Rock Square, which could have up to 5,000 attendees, would result in pedestrians walking from the north over the Lefty O'Doul/Third Street Bridge or through the project site from the T Third light-rail stop at Third Street and Mission Rock Street. Pedestrians walking between the Great Lawn and the T Third light-rail stop would walk primarily along Third Street, Long Bridge Street, the Shared Public Way, and Bridgeview Street. Bridgeview Street, a north–south neighborhood street, would have a 12-foot-wide sidewalk on the west side and a 14-foot-wide sidewalk on the east side. No driveways would be located along the section of Bridgeview Street between Long Bridge Street and China Basin Park. Vehicle traffic, with the exception of emergency vehicle access, would be prohibited along the Shared Public Way for big events at the Great Lawn or Mission Rock Square.

The proposed project would include an underground parking structure with 700 parking spaces under Mission Rock Square and an aboveground parking structure on Block D2 with 2,300 spaces. The proposed project may include up to 100 additional parking spaces within the proposed buildings (approximately 10 spaces per block), which would be dispersed throughout the site. Channel Street would have a 12-foot-wide pedestrian throughway and plaza on either side of a vehicle ramp leading to the 700-space underground Mission Rock Square garage.

The Block D2 parking structure would have six access points: two driveways on the north side of Mission Rock Street, two driveways on the west side of Bridgeview Street, and two driveways on the south side of Long Bridge Street. Five of the six driveways would have two lanes, with a width of approximately 25 feet. The easternmost driveway on Mission Rock Street would have three lanes, with a width of approximately 35 feet.

Most pedestrians traveling to and from the Block D2 parking structure would use the elevator bank on the north side of the parking structure to exit onto Long Bridge Street, would cross Long Bridge Street at the Shared Public Way, and then walk along the Shared Public Way or

Bridgeview Street to reach project uses located north of the garage. Pedestrians who use these routes would not cross the parking garage driveways and, thus, would avoid conflicts with autos when entering or exiting the garage. Pedestrians who exit the elevator banks and travel to the east or west on the south side of Long Bridge Street would cross one of the two-lane driveways located on Long Bridge Street. Pedestrians who use the stairwells in the northwest and southeast corners of the parking structure would be in proximity to access points and could cross one or more garage driveways to reach their destinations.

The pedestrian-related features of the proposed project would not result in hazardous pedestrian conditions or present barriers to pedestrian accessibility, based on a review of the cross sections and conceptual plans provided in the Mission Rock Design Controls document.

The quantitative parking garage queue analysis described previously in the transit section indicates that queues from the underground parking structure under Mission Rock Square would not extend west to Third Street under any of the study scenarios. The analysis described previously in Impact TR-3 indicates that queues from the easternmost driveway on Long Bridge Street would extend into the adjacent Long Bridge Street/Bridgeview Street intersection and cause a pedestrian hazard. The analysis described previously in Impact TR-4 indicates that the queue from the westernmost driveway on Mission Rock Street would extend into the adjacent Third Street/Mission Rock Street and cause a pedestrian hazard. The above hazards caused by vehicle queues for pedestrians would be a ***significant*** impact.

With implementation of Mitigation Measures M-TR-3 and M-TR-6, vehicle impacts on pedestrians generated by project trips to the project's parking garage would be reduced to ***less-than-significant*** levels.

Although the number of pedestrian crossings at the garage driveways would be small, based on the garage configuration and location of adjacent uses, design features should be provided at the garage driveways to provide for safe crossings. The design of the garage vehicle access points, pedestrian access points, and surrounding streets would minimize the potential for pedestrian/vehicle conflicts. Improvement Measure I-TR-7 would further enhance pedestrian safety at garage entrances.

I-TR-7: Garage Access – Pedestrian Design Features

During the final design process for the parking facilities and the pedestrian realm of adjacent streets, improvements should be designed for the safe interface of vehicles and pedestrians at parking facility driveways. This design should include adequate sight distance, signing, striping, warning devices, and lighting.

Impact TR-8. Existing pedestrian facilities on the Third Street Bridge, the Fourth Street Bridge, and the Fourth Street/King Street intersection are sized adequately to accommodate pedestrian traffic generated by the proposed project. (Less than Significant)

Third Street and Fourth Street would be the primary routes for pedestrians traveling from off-site locations to and from the proposed project. Pedestrians would walk from local and regional transit stops, including Caltrain, BART, Muni, and MBTMA facilities. Pedestrians who walk to and from the Fourth and King Caltrain station, less than 0.5 mile from the project site, would use primarily Fourth Street and Channel Street. Sidewalks, approximately 12 feet wide, exist on both sides of those streets to provide a connection to the site. This section evaluates pedestrian capacity on key off-site locations including the Fourth Street Bridge, the Third Street Bridge, and the Fourth Street/King Street intersection.

Tables 4.E-30 through 4.E-32, pages 4.E-139 through 4.E-141, present pedestrian volumes and pedestrian LOS at the crosswalks of the intersection of Fourth and King Streets, as well as the two bridges over Mission Creek, for the a.m., p.m. without Giants game, and p.m. with Giants game peak periods with additional pedestrian volumes generated by the proposed project under both land use assumptions. All locations operate at LOS D or better under all baseline plus-project scenarios. As noted previously under *Pedestrian Facilities*, the intersection of Fourth and King Streets is not evaluated for the p.m. peak hour with a Giants game as the intersection is controlled by a police officer during events at AT&T Park. During crush pre-event and post-event flows, pedestrians often travel outside the marked crosswalk areas, whose dimensions are the basis for the pedestrian level of service assessments. The proposed project would have a ***less-than-significant*** impact on pedestrian LOS because LOS D or better conditions would occur under all baseline plus-project scenarios, at all evaluated intersections.

Impact TR-9. The proposed project would have significant impacts on pedestrian safety at the unsignalized intersections of Fourth Street/Mission Rock Street and Fourth Street/Long Bridge Street. (Significant and Unavoidable with Mitigation)

The proposed project would increase traffic volumes on Fourth Street and would result in new pedestrian trips where pedestrians cross Fourth Street. As a result, the proposed project could have significant impacts on pedestrian safety. Proposed project effects would be primarily from new peak-hour vehicle trips and event trips traveling to and from the project site, resulting in an increase in the number of vehicles traveling through unsignalized intersections on Fourth Street at Mission Rock Street and Fourth Street at Long Bridge Street, primarily to access the Block D2 parking garage on Mission Rock Street. The High Residential Assumption would result in approximately 2,678 "other" person-trips during the p.m. peak hour; the High Commercial Assumption would result in approximately 2,786 "other" person-trips during the p.m. peak hour. Some of these "other" person-trips would be pedestrian trips that would utilize Fourth Street. This increase in the number of vehicles and pedestrians from the project site may create potentially hazardous conditions for pedestrians while attempting to cross the street along these unsignalized intersections, which would be a ***significant*** impact.

TABLE 4.E-30. PEDESTRIAN CROSSWALK/SIDEWALK LEVEL OF SERVICE – A.M. PEAK HOUR

Analysis Locations	Baseline Conditions			Baseline Plus-Project Conditions – High Commercial Assumption			Baseline Plus-Project Conditions – High Residential Assumption		
		Level of Service			Level of Service			Level of Service	
	Pedestrians per Hour	Measure of Effectiveness	LOS	Pedestrians per Hour	Measure of Effectiveness	LOS	Pedestrians per Hour	Measure of Effectiveness	LOS
Fourth Street/King Street[1]									
North	505	82	A	1,263	31	B	1,212	33	C
South	220	110	A	550	43	A	528	45	B
East	296	119	A	740	47	A	710	49	B
West	1,034	47	B	2,585	18	D	2,482	19	D
Third Street Bridge (Lefty O'Doul Bridge)[2]									
East	131	0.5	B	327	1.4	B	314	1.3	B
West	75	0.3	A	187	0.7	B	180	0.7	B
Fourth Street Bridge[2]									
East	50	0.2	A	126	0.5	B	120	0.5	B
West	145	0.5	B	363	1.4	B	348	1.3	B

Source: Fehr & Peers, 2015

Notes:

Bold indicates crosswalk operations at LOS E or LOS F.

1. Square feet per pedestrian.
2. Pedestrians per minute per foot. LOS is presented for "platoon" conditions, representing conditions when pedestrians are walking together in a group.

TABLE 4.E-31. PEDESTRIAN CROSSWALK/SIDEWALK LEVEL OF SERVICE – P.M. PEAK HOUR WITHOUT GIANTS GAME

Analysis Locations	Baseline Conditions			Baseline Plus-Project Conditions – High Commercial Assumption			Baseline Plus-Project Conditions – High Residential Assumption		
		Level of Service			Level of Service			Level of Service	
	Pedestrians per Hour	Measure of Effectiveness	LOS	Pedestrians per Hour	Measure of Effectiveness	LOS	Pedestrians per Hour	Measure of Effectiveness	LOS
Fourth Street/King Street[1]									
North	695	69	A	1,738	26	C	1,668	28	C
South	761	46	B	1,902	17	D	1,826	18	D
East	678	65	A	1,695	25	C	1,627	26	C
West	1,648	38	C	3,296	18	D	3,131	19	D
Third Street Bridge (Lefty O'Doul Bridge)[2]									
East	209	0.8	B	523	2.0	B	502	1.9	B
West	120	0.5	A	300	1.2	B	288	1.2	B
Fourth Street Bridge[2]									
East	19	0.1	A	47	0.2	A	46	0.2	A
West	213	0.8	B	533	1.9	B	511	1.8	B

Source: Fehr & Peers, 2015

Notes:

Bold indicates crosswalk operations at LOS E or LOS F.

1. Square feet per pedestrian.
2. Pedestrians per minute per foot. LOS is presented for "platoon" conditions, representing conditions when pedestrians are walking together in a group.

TABLE 4.E-32. PEDESTRIAN CROSSWALK/SIDEWALK LEVEL OF SERVICE – P.M. PEAK HOUR WITH GIANTS GAME

Analysis Locations	Baseline Conditions			Baseline Plus-Project Conditions – High Commercial Assumption			Baseline Plus-Project Conditions – High Residential Assumption		
		Level of Service			Level of Service			Level of Service	
	Pedestrians per Hour	Measure of Effectiveness	LOS	Pedestrians per Hour	Measure of Effectiveness	LOS	Pedestrians per Hour	Measure of Effectiveness	LOS
Third Street Bridge (Lefty O'Doul Bridge) [1]									
East	907	3.4	C	2,267	8.5	D	2,176	8.2	D
West	125	0.5	B	313	1.3	B	300	1.3	B
Fourth Street Bridge[1]									
East	28	0.1	A	70	0.3	A	67	0.3	A
West	205	0.8	B	513	2.0	B	492	2.0	B

Source: Fehr & Peers, 2015

Notes:

Bold indicates crosswalk operations at LOS E or LOS F.

1. Pedestrians per minute per foot. LOS is presented for "platoon" conditions, which represent the conditions when pedestrians are walking together in a group.

M-TR-9: Install Traffic Signals and Related Intersection Improvements at Unsignalized Intersections on Fourth Street at Mission Rock Street and Long Bridge Street

Prior to issuance of approval of the third building site permit, but in no event later than the site permit for the Block D2 parking garage, the project sponsor shall provide funding to SFMTA, for a maximum amount of $1 million for SFMTA to design and construct (1) a traffic signal at the intersection of Fourth Street/Long Bridge Street and (2) a traffic signal at the intersection of Fourth Street/Mission Rock Street. These improvements should be constructed by SFMTA prior to opening of the Block D2 parking garage.

The above mitigation measure would provide traffic signals with pedestrian indications at the unsignalized intersections of Fourth Street/Mission Rock Street and Fourth Street/Long Bridge Street. Northbound and southbound vehicles traveling along Fourth Street do not have stop control at these two intersections. The provision of traffic signals would allow pedestrians to cross Fourth Street while northbound and southbound vehicle traffic is stopped.

Implementation of Mitigation Measure M-TR-9 would fully resolve pedestrian safety impacts such that such impacts would be ***less than significant***. However, at this time, the approval of the signalization improvements is considered somewhat uncertain, because they will require SFMTA Board approval. Thus, because implementation of Mitigation Measure M-TR-9, is uncertain to such extent, the proposed project's pedestrian safety impacts would at this time continue to be considered ***significant and unavoidable with mitigation.***

BICYCLE IMPACTS

Impact TR-10. The proposed project would create potentially hazardous conditions for bicyclists and would interfere with bicycle accessibility to the project site or adjoining areas. (Less than Significant with Mitigation)

The following assessment of bicycle conditions considers whether the project would create any conditions hazardous to cyclists. The assessment of potential safety impacts on the bicycle network includes whether vehicle queues generated by project vehicle trips to the project's parking garages would affect cyclists at intersections and garage access points. The analysis of bicycle impacts also considers whether the addition of project vehicle trips would have an impact on the bicycle network.

The proposed project would provide two major north–south bicycle routes within the site, improving accessibility by providing connections between the Lefty O'Doul/Third Street Bridge over China Basin and the Blue Greenway along Terry A. Francois Boulevard south of Mission Rock Street, as shown in Figure 4.E-6, on page 4.E-60. In addition, northbound

cyclists would be able to bypass China Basin Park via a Class II bicycle lane on westbound Exposition Street and northbound Third Street. For internal circulation within the project site, cyclists would share the travel lane with trucks and autos within the shared zone on Terry A. Francois Boulevard and the Shared Public Way as well as the travel lanes on Long Bridge Street and the eastbound lane of Exposition Street.

As presented in Tables 4.E-18, page 4.E-88, and 4.E-19, page 4.E-89, the proposed project would generate 1,572 non-auto, non-transit trips in the a.m. peak hour and 2,678 during the weekday p.m. peak hour with the High Residential Assumption. The proposed project would generate 1,705 non-auto, non-transit trips in the a.m. peak hour and 2,816 during the weekday p.m. peak hour with the High Commercial Assumption. Many of these trips will be bicycle trips. Non-auto, non-transit trips include bicycle, pedestrian, motorcycle, taxi, and other transportation modes as well as internal trips.

Bicycle travel for an event at the China Basin Park Great Lawn or Mission Rock Square, which could have up to 5,000 attendees, would occur primarily via the Lefty O'Doul/Third Street Bridge from the north or through the project site from the south via the Blue Greenway, located along Terry A. Francois Boulevard. Bike valet facilities would be located just southeast of the Great Lawn, immediately adjacent to the Blue Greenway, for major events.

The access points and driveways to parking garages could create conflicts with cyclists. With respect to Mission Rock Square underground parking structure, because there are no existing or proposed bicycle facilities along Channel Street west of Third Street or along Third Street at Channel Street where the primary garage driveway ramp is located, and the cycle track on the east side of Terry A. Francois is on the opposite side of the street from the exit ramp on the east side of the garage and buffered by a three-foot-wide barrier, as such effects on cyclists due to the Mission Rock Square underground parking structure would be minimal. The Block D2 parking structure would have six access points: two driveways on the north side of Mission Rock Street, two driveways on the west side of Bridgeview Street, and two driveways on the south side of Long Bridge Street. The major bicycle facilities through the project site include the cycle track along the east side of Bridgeview Street and the Blue Greenway along the east side of Terry A. Francois Boulevard. The Block D2 parking structure access points on Bridgeview Street would be on the west side of the street; vehicle access to these driveways would not conflict with cyclists in the protected cycle track on the east side of the street. Long Bridge Street would have a designated Class III shared bicycle route along the north side of the Block D2 parking structure. The Block D2 parking structure access points on Long Bridge Street would be located on both sides of the intersection of Long Bridge Street and the Shared Public Way, which would be all-way stop controlled with a raised design. The proposed project's raised intersection design and stop control on Long Bridge Street would mean that traffic on Long Bridge Street would travel at slow speeds adjacent to the garage driveway.

The analysis described previously in Impact TR-3 indicates that queues from the easternmost driveway on Long Bridge Street would extend into the adjacent Long Bridge Street/Bridgeview Street intersection and cause a bicycle hazard. The analysis described previously in Impact TR-6 indicates that the queue from the westernmost driveway on Mission Rock Street would extend into the adjacent Third Street/Mission Rock Street and cause a bicycle hazard. The above hazards caused by vehicle queues for pedestrians would be a ***significant*** impact.

With implementation of Mitigation Measures M-TR-3 and M-TR-6, vehicle impacts on bicycles generated by project trips to the project's parking garage would be reduced to ***less-than-significant*** levels.

A total of 38 trucks would use Exposition Street and Terry A. Francois Boulevard each day as access Pier 48. Trucks accessing Pier 48, that are a maximum size of WB-67,[64] would cross the Blue Greenway. Only trucks servicing Pier 48 and emergency vehicles would be able to access Pier 48 and cross the Blue Greenway. Large WB-67 trucks accessing Pier 48 from Terry A. Francois Boulevard would need to back into the Pier 48 valley,[65] based on the proposed driveway design, and would do so by making a three point turn at the intersection of Terry A. Francois Boulevard and Exposition Street. The movement of trucks backing into Pier 48 across the Blue Greenway along the east side of Terry A. Francois Boulevard could result in hazards with cyclists. This would be a ***significant*** impact.

M-TR-10: Bicycle-Truck Interface at Pier 48

The project shall construct a highly visible crossing treatment across the driveway as well as bollards and detectable warning pavers that satisfy ADA requirements at the Pier 48 driveway's beginning and end locations along the Blue Greenway path to warn cyclists and pedestrians of the upcoming driveway crossing.

The project shall provide a traffic control staff at the junction of the Blue Greenway and the driveway to the Pier 48 valley during deliveries to manage bicycle and truck traffic. A flagger shall be provided to manage bicycle and pedestrian travel along the Blue Greenway at the Pier 48 valley driveway whenever trucks back into Pier 48.

With implementation of Mitigation Measure M-TR-10, the proposed project would reduce hazards to bicycle circulation within the project site. The impact would be reduced to ***less-than-significant*** levels.

Although the potential for conflict would be low, based on the garage access locations and slow vehicle speeds on Long Bridge Street, design features should be provided on Long Bridge Street

[64] A WB-67 is an interstate semitrailer truck that is approximately 75 feet in length.
[65] The Pier 48 valley is the open space in the center of the pier between the sheds.

at the garage driveways to provide good visibility for vehicles when exiting the garage. The design of the garage vehicle access points, bicycle facilities, and surrounding streets would minimize the potential for bicycle/vehicle conflicts. Improvement Measure I-TR-10 would further enhance vehicle/bicycle safety at the Long Bridge Street garage entrance.

I-TR-10: Garage Access – Bicycle-Vehicle Design Features

During the final design process for Long Bridge Street, adequate sight distance should be provided through a combination of signing, striping, and lighting improvements, which should be designed for the safe interface of vehicles and cyclists at the two Block D2 parking facility driveways.

The project would provide a variety of permanent bicycle storage options, including a network of spaces in public areas and conveniently located secure spaces inside the site's residential and office buildings. The High Residential Assumption would provide 2,045 Class I bicycle parking facilities and 603 Class II bicycle racks. The High Commercial Assumption would provide 1,670 Class I bicycle parking facilities and 586 Class II bicycle racks. Bike parking facilities could be located on the ground-floor or basement level of project buildings, as well as throughout the district, in accordance with the Mission Rock SUD and Design Controls, including in plaza areas, building entries, and open space. Lockers and showers would also be provided to encourage cycling. Furthermore, the proposed project would set aside space for at least one Bay Area Bike Share dock to facilitate onsite bike sharing and include bicycle maintenance spaces for residents and employees. The level of bicycle activity in relation to the supply of on-street bicycle facilities would be similar to most other comparable areas in San Francisco.

LOADING IMPACTS

Impact TR-11.The proposed project's loading demand during the peak loading hour would not be adequately accommodated by the proposed onsite/off-street loading supply or in proposed on-street loading zones, which may create hazardous conditions or significant delays for transit, bicycles, or pedestrians. (Less than Significant with Mitigation)

The loading demand generated by the proposed project is presented in Table 4.E-20, page 4.E-91. The daily truck generation rates for all uses in Table 4.E-20, with the exception of the brewery on Pier 48, are from SF Guidelines. Truck count data were collected at the existing Anchor Brewery facility in San Francisco[66] and adjusted to reflect the proposed brewery facility on Pier 48 because the SF Guidelines do not provide truck trip generation rates for brewery uses.

[66] Adavant Consulting. *The Mission Rock (Seawall Lot 337/Pier 48) Project Estimation of Project Travel Demand – Updated Project Definition*. June 30, 2015, Appendix B.

Overall, the High Residential Assumption would generate a demand for approximately 800 daily delivery and service vehicle trips. The High Commercial Assumption would generate a demand for approximately 877 daily delivery and service vehicle trips. Deliveries would be made primarily by small trucks and vans, typical of deliveries throughout the city. About 25 percent of deliveries would be made by large trucks, such as garbage trucks, and tractor-trailer rigs. Loading would not occur within proposed curb cuts.

The loading demand for Pier 48 uses would be for four loading spaces during the average loading hour and five loading spaces during the peak loading hour. The loading demand for Pier 48 uses are based on data collected at the existing Anchor Brewery site in San Francisco and adjusted to reflect the proposed brewery on Pier 48. A total of five loading spaces would be provided on Pier 48. As such, the project would adequately accommodate loading demand on Pier 48 uses and loading impacts at Pier 48 would be ***less than significant***.

The demand for loading spaces for Seawall Lot 337 uses would range from approximately 34 spaces in the High Residential Assumption to 37 spaces in the High Commercial Assumption in the average loading hour. In the peak loading hour, the demand for loading spaces for Seawall Lot 337 uses would be approximately 40 loading spaces in the High Residential Assumption and 45 loading spaces in the High Commercial Assumption. Residential or commercial loading demand, which are included in the loading demand totals, would be generated when tenants move in and out of a building. This loading would be from on-street loading spaces near the building entrances. During peak hours, the loading demand for all residential uses would be three spaces for the High Residential Assumption and two spaces for the High Commercial Assumption. Residential and commercial buildings would also generate parcel delivery vehicles (e.g., U.S. Postal Service, United Parcel Service, and Federal Express vans) in addition to large moving vans.

The Mission Rock Transportation Demand Management (TDM) Strategy includes several planned strategies designed to reduce peak truck loading demands.

- Onsite Transportation Staff: hire at least one onsite transportation staff person proficient in the planning and implementation of a TDM program, with an annual budget for TDM staff, communications and programs. This staff person would act as a centralized transportation resource to in-building concierges.
- In-Building Concierge Services: encourage vertical developers to appoint an in-building concierge to provide information about local merchants and coordinate/facilitate delivery services for residents.
- Coordinated Delivery Services: aim to establish site-wide partnerships with delivery service companies. This will be documented in a loading management plan, which will be developed in a future phase of project development, in coordination with the City.

Figure 4.E-7, on page 4.E-67, shows the location of loading zones that would be provided by the proposed project for Seawall Lot 337 uses. The project would provide 650 linear feet of curb space for commercial loading activities associated with Seawall Lot 337 uses during the peak loading hour. Garbage and recycling needs would be served by the commercial loading areas as well as commercial deliveries. The 650 linear feet of curb space provided for commercial loading activities associated with Seawall Lot 337 uses would accommodate approximately 24 trucks, based on the truck vehicle mix in SF Guidelines, and would not meet demand during the peak loading hour for Seawall Lot 337 uses under either the High Residential Assumption or High Commercial Assumption. The shortfall in loading spaces would result in delivery vehicles double parking on interior streets such as Long Bridge Street and Exposition Street, which may result in hazards to cyclists and other vehicles. As such, there would be a loading supply shortfall for Seawall Lot 337 uses that would result in potentially hazardous traffic conditions, resulting in a ***significant*** impact.

M-TR-11.1: Commercial Loading Supply – Monitor Loading Activity and Implement Additional Loading Management Strategies as Needed

After completion (of the first phase of the proposed project and prior to approval of each subsequent phase, the project sponsor shall conduct a study of utilization of commercial loading spaces. The methodology for the study shall be reviewed and approved by the Planning Department prior to completion. If the result of the study indicates that fewer than 15 percent of the commercial loading spaces are available during the peak loading period, the project sponsor shall implement additional loading management strategies and/or provide additional or expanded off-street loading supply sufficient to meet the loading demand in subsequent phases of the project in either the garages or in off-street parking in individual buildings, consistent with the proposed project's design intent. Additional loading strategies could include (but are not limited to): expanding efforts to coordinate with parcel delivery companies to schedule deliveries to the site during hours outside the peak hour of loading, installing parcel lock boxes that allow parcel delivery personnel unsupervised access to enable off-hour deliveries, coordinating delivery services across buildings to enable the delivery of several buildings' packages to a single location, and/or encouraging deliveries to the retail and restaurant components of the projects to happen during early morning or late evening hours. The project sponsor may also address a shortfall by reserving parking spaces for smaller delivery vehicles such as autos or vans, which comprise approximately two-thirds of the vehicle types for freight delivery service, on the ground floor of the Block D2 garage during peak or appropriate business hours for small-vehicle deliveries and, in connection therewith, providing hand trucks,

bicycles, or electric wheeled carts for distribution of packages to buildings throughout the site.

If plans for individual buildings include a driveway to off-street loading or parking (maximum 10 off-street spaces) along a frontage that has a designated on-street loading zone, an equivalent amount or level of off-street loading space shall be provided to effectively replace the lost on-street loading area.

M-TR-11.2: Coordinate Deliveries and Tenant Moving Activities

The project's transportation coordinator and in-building concierges shall coordinate with building tenants and delivery services to minimize deliveries and moving activities during peak periods, and endeavor to spread deliveries across the full day and moving activities to time periods after regular working hours, thereby reducing activity during the peak hour for loading.

Although many deliveries cannot be limited to specific hours, the transportation coordinator and in-building concierges shall work with tenants to find opportunities to consolidate deliveries and reduce the need for peak-period deliveries, wherever possible.

Implementation of Mitigation Measures M-TR-11.1 and M-TR-11.2 would resolve the loading shortfall. Thus, with implementation of Mitigation Measures M-TR-11.1 and M-TR-11.2, the proposed project's loading impacts would be ***less than significant***.

EMERGENCY ACCESS

Impact TR-12. The proposed project could result in significant impacts on emergency access to the project site or adjacent locations. (Less than Significant with Mitigation)

Emergency access to the project site and the emergency room at UCSF Medical Center at Mission Bay would remain unchanged from existing conditions. Emergency vehicles would continue to access the site from Third Street and Terry A. Francois Boulevard. Aside from the general increase in vehicle traffic that would result from the additional activity at the site, the proposed project would not inhibit emergency access to the project site.

The proposed internal roadway network would provide a 20-foot (minimum) clear width on all streets. Clear street widths would range from 20 to 26 feet on most streets; Mission Rock Street and Bridgeview Street would be 34 feet wide. Proposed paseos would accommodate emergency vehicles, and the proposed Shared Public Way would provide a 20-foot-wide shared zone for vehicular and loading access, including emergency vehicles. Proposed street cross-sections include loading and parking restrictions where width is limited to avoid impeding access for San Francisco Fire Department (SFFD) vehicles. A fire access evaluation of turning radii indicates that emergency vehicles can access the project site from Third Street and travel along all internal

project streets.[67] Internal intersections are designed to accommodate the truck turning movements of a City of San Francisco 57-foot articulated fire truck, the largest emergency vehicle evaluated, including a SFFD engine, SFFD rescue squad, and a second version of the 57-foot articulated fire truck. At intersection approaches and within intersections, the articulated fire truck may encroach upon the opposing vehicular travel lane to complete turning movements, but a minimum of 7 feet of refuge area would be provided for any cars within the opposing lanes.

Emergency vehicle access to Pier 48 would be provided via Terry A. Francois Boulevard. The proposed cross-section for this roadway includes a 26-foot-wide shared zone for vehicular access, including emergency vehicles. The aforementioned fire access evaluation indicates that emergency vehicles can access Pier 48 via any of the three east-west project streets that connect to Terry A. Francois Boulevard.

Regarding police access to the Public Safety Building at 1245 Third Street, located immediately south of the project site, primary garage access occurs on China Basin Street, secondary garage access occurs on Mission Rock Street, and public entry occurs on Third Street. These access points would be affected by the proposed project. Fire truck access occurs on Mission Rock Street. The proposed project includes implementation of a "keep clear" zone on Mission Rock Street in front of the police and fire truck access point to ensure that police vehicles and fire trucks are provided clear access and egress. Mitigation Measure 4.3 will further improve conditions by prohibiting left turns into the westernmost driveway for the Block D2 parking garage on Mission Rock Street, which is located across the street from the fire truck access point, and thereby shifting eastbound vehicles destined to the Block D2 parking garage to the easternmost driveway on Mission Rock Street.

Development of the project site, and associated increases in vehicles, pedestrians, and bicycle travel would not substantially affect emergency vehicle access to other buildings and areas within Mission Bay, including the UCSF campus. The new UCSF Medical Center Phase 1 opened in February 2015, and contains an emergency room and urgent care center for the UCSF Children's Hospital at the southern end of the hospital complex, with access from Fourth Street, north of Mariposa Street. Access to the Fourth Street urgent care center is directly from Mariposa Street, or from Owens Street via the Southern Connector Road (an internal road within the medical center campus site that provides access between the south Medical Center entrance and the parking facilities). Owens Street can be accessed from 16th Street, the I-280 northbound off-ramp, and Mariposa Street. A number of roadway improvements were implemented as part of Phase 1 of the UCSF Medical Center that enhance access to UCSF and critical hospital services including extending Owens Street between Mariposa and 16th Streets, widening Mariposa Street to five lanes, installing a new signal at the Mariposa Street and Owens Street intersection, adding a lane on the I-280 northbound off-

[67] Mission Rock Infrastructure Plan, September 20, 2016.

ramp at Mariposa Street, and constructing a new signal at Mariposa Street at the I-280 northbound off-ramp. Transit priority and pedestrian safety improvements along 16th Street, including median transit-only lanes, could be used by emergency vehicles traveling to UCSF Medical Center.

On Mariposa Street, if necessary, emergency vehicles and other persons accessing the emergency room and urgent care center in their personal vehicles during an emergency would be able to travel within the center left-turn lane to access the intersection of Fourth/Mariposa. As documented in the Mission Rock (Seawall Lot 337/Pier 48) Transportation Impact Study, the three signalized intersections along the segment of Mariposa Street that serves as the main access points to UCSF Children's Hospital, between I-280 and Third Street, are projected to operate at LOS D or better during the a.m. peak hour and p.m. peak hour under baseline plus-project conditions under both the High Commercial Assumption and High Residential Assumption with no events (the exception would be the Mariposa Street/I-280 southbound off-ramp, which would change to LOS E during the a.m. peak hour). Therefore, the proposed project would not result in substantial increases in vehicle delay for emergency vehicles or other persons accessing the emergency room and urgent care center in their personal vehicles under the no-event scenarios.

During events at AT&T Park, pre-event and post-event vehicular traffic destined for the onsite garages will be managed as it is currently to minimize impacts on emergency-vehicle circulation and access as well as private vehicles destined for the UCSF emergency room and urgent care center. During pre-event conditions at AT&T Park, up to 21 PCOs are stationed at 17 locations. During post-event conditions, up to 19 PCOs are stationed at 14 locations. These locations include intersections along Third Street, Mission Rock Street, and Terry A. Francois Boulevard along the project boundaries. During major events, the north–south Shared Public Way within the project site would be closed to vehicles, with the exception of emergency vehicles. If necessary, emergency vehicles would be able to travel on Muni's light rail right-of-way in the median of Third Street. PCOs deployed for dual events at AT&T Park and/or the proposed Golden State Warriors Event Center would have the capability to respond to conflicts between event center traffic and UCSF hospital access. PCOs also have the capability to radio ahead to other downstream PCOs to inform them of approaching vehicles requiring emergency access.

To address issues related to simultaneous events at AT&T Park and the Mission Rock site, the proposed project has prepared detailed event management plans that include combinations of strategies, as described in Chapter 5 of the Mission Rock Transportation Plan.[68] The Event Management measures identified in the Mission Rock Transportation Plan describe strategies for a primary event at AT&T Park (40,000+ attendees), a secondary event at AT&T Park (15,000 to 25,000 attendees), and onsite events (2,000 to 5,000 attendees). Additionally, event

[68] Mission Rock Transportation Plan, October 31, 2016.

traffic management systems at AT&T Park are reviewed and refined continuously to plan for such simultaneous events. Therefore, both events would develop refinements to their plans as needed to ensure emergency vehicle circulation is accommodated.

Roadway improvements adjacent to the UCSF facilities would facilitate emergency vehicle access. Before and after events, emergency vehicle access to the project site and UCSF Medical Center uses would be maintained, as would emergency access for persons traveling to the emergency room and urgent care center in their personal vehicles.

For these reasons, the proposed project would not inhibit emergency vehicle access to the project site and nearby vicinity under the event scenario. The proposed project would be designed to provide an adequate "keep clear" zone for police and fire department vehicle access into the Public Safety Building across Mission Rock Street. However, because coordination with police and fire departments on the final street design has not yet concluded, this would conservatively be a significant impact. The mitigation measure below shall be implemented to reduce this significant impact to a less-than-significant level.

M-TR-12: Coordinate Final Design of the "Keep Clear" Zone on Mission Rock Street (in front of the Public Safety Building) with Police and Fire Departments

Prior to finalizing the design and dimensions of the "keep clear" zone on Mission Rock Street in front of the police and fire truck access point (in front of the Public Safety Building), the project sponsor shall coordinate the design with the police and fire departments.

Implementation of Mitigation Measures M-TR-12 would ensure clear access and ingress/egress for the Police and Fire Departments' vehicles to the Public Safety Building. Thus, with implementation of Mitigation Measure M-TR-12, the proposed project's significant impacts on Police and Fire Department vehicles' clear access to the Public Safety Building would be ***less than significant with mitigation***.

Additionally, implementation of Improvement Measure I-TR-12: Strategies to Enhance Transportation Conditions During Events would ensure that large events at the Mission Rock project are coordinated with events at AT&T Park to further reduce the ***less-than-significant*** effects of access for emergency vehicles.

I-TR-12: Strategies to Enhance Transportation Conditions during Large Events

The project's Transportation Coordinator should participate as a member of the Mission Bay Ballpark Transportation Coordination Committee and provide at least 1-month notification to the Committee prior to the start of any large event that would overlap with an event at AT&T Park.

PARKING IMPACTS

Impact TR-13.The proposed project would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and particular characteristics of the proposed project would not render the use of other modes infeasible. (Less than Significant)

Parking conditions are not static, as parking supply and demand vary from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel. While parking conditions change over time, a substantial deficit in parking caused by a project that creates hazardous conditions or major delays to traffic, transit, bicycles or pedestrians could adversely affect the physical environment. Whether a deficit in parking creates such conditions will depend on the magnitude of the shortfall and the ability of drivers to change travel patterns or switch to other travel modes. If a substantial deficit in parking caused by a project creates hazardous conditions or major delays in travel, such a condition also could result in secondary physical environmental impacts (e.g., air quality or noise impacts cause by congestion), depending on the project and its setting.

The absence of a ready supply of parking spaces, combined with available options other than auto travel (e.g., transit service, taxis, bicycles or walking) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service or other modes (walking and biking) would be in keeping with the City's *Transit-First Policy* and numerous San Francisco General Plan Policies, including those in the Transportation Element, as discussed previously in the transportation regulatory framework. The City's Transit-First Policy, established in the City's Charter Article 8A, §8A.115 provides that "parking policies for areas well served by public transit shall be designed to encourage travel by public transportation and alternative transportation."

The proposed project would generate demand from people who need to access the site, which may result in people deciding to drive and then park at or near the project site. In evaluating whether a parking deficit is substantial, and thus could result in hazardous conditions or delays, the analysis considered whether the parking demand resulting from the proposed project could not be met by the overall supply of parking in the general vicinity of the proposed project; and whether the project site is adequately served by other modes of transportation (i.e., taxis, transportation network company vehicles, Muni, regional transit providers, bicycle and pedestrian facilities). The analysis also considers whether the potential loss of parking, or shortfall in parking, is temporary or intermittent. Generally, if the parking loss is not substantial, it is anticipated that it would not create hazardous conditions or major delays to other modes. In situations where a parking deficit is considered substantial, potential hazardous conditions related to the parking loss were considered. The potential hazards or delays considered included:

whether the parking loss would lead to additional traffic circling in the area that could result in vehicles double parking in a bicycle lane or in mixed-flow/transit-only lanes, particularly when it is a one-lane roadway in each direction; and whether vehicles would impair visibility on narrow streets (e.g., the midblock alleys), block sidewalks or crosswalks, or block access to fire hydrants.

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near their destination and then seek parking farther away if convenient parking is unavailable. The secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area, and thus choose to reach their destination by other modes (i.e., walking, biking, transit, taxi). If this occurs, any secondary environmental impacts that may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the assessment of transit delay, as well as the associated air quality, noise, and pedestrian safety analyses, would reasonably address potential secondary effects.

This section includes a discussion of the project's parking supply, the overall availability of parking in the broader study area, and the calculated project-generated parking demand. A summary of the project's parking supply and demand is shown in Table 4.E-33, on the following page.

The baseline and "with project" deficits and surpluses, both for the project site alone and for the broader study area take into consideration the removal of the 95 on-street parking spaces along Terry A. Francois Boulevard.

The project site was recently rezoned, pursuant to Proposition D, to the Mission Rock Height and Bulk District, which is intended "to enable development of Mission Rock as a mixed use, transit-oriented neighborhood, with significant open space, public access and affordable housing." The project site is proposed to be further rezoned by adding a Special Use District (SUD) overlay district. The City's Planning Code does not have parking minimums or maximums for the Mission Rock Height and Bulk District; moreover, it allows SUDs to establish parking minimums or maximums that may deviate from otherwise applicable parking requirements. The SUD for the project site would establish project-specific parking requirements consistent with the parking proposed to be provided as part of the project that would be considered by the San Francisco Board of Supervisors based upon consideration of recommendations from the Planning Commission and Planning Department staff.

As shown in Table 4.E-33, on the following page, the broader study area currently has substantial surpluses of parking, including during weekday evenings during Giants games at AT&T Park. The largest surplus in parking in the study area occurs during weekday evenings. The estimated peak demand for parking generated by the proposed project would exceed the amount of parking proposed by the project, with the exception of weekday evenings under the High Commercial Assumption when there is no Giants game. Given the current parking surplus in the study area,

TABLE 4.E-33. PARKING SUPPLY AND DEMAND

Land Use	Proposed Supply	Existing Study Area Surplus/ (Deficit)[1]	Calculated Project Peak Demand	Onsite Surplus/ (Deficit) With Project	Study Area Surplus/ (Deficit) With Project
Midday					
High Residential Assumption	3,100	596	3,846	(746)	(150)
High Commercial Assumption	3,100	596	3,655	(555)	41
Evening					
High Residential Assumption	3,100	2,204	3,344	(244)	1,960
High Commercial Assumption	3,100	2,204	2,614	486	2,690
Evening with Game					
High Residential Assumption	1,100[2]	2,145	3,344	(2,244)	(99)
High Commercial Assumption	1,100[2]	2,145	2,614	(1,514)	631

Source: SF Guidelines, 2002; Fehr & Peers, 2015

Notes:

[1] Study Area surplus/deficit does not account for existing Lot A, which will be removed as part of the proposed project.

[2] Assumes 2,000 spaces are prioritized for parking for Giants game patrons.

there is adequate parking supply to absorb the additional demand generated by the proposed project, except during the midday period and during Giants games with the High Residential Assumption when the demand generated by event traffic combined with project demand would exceed the overall study area supply by approximately 100 to 150 spaces. For large events at AT&T Park, parking pricing at the project parking garages would be used to encourage users to vacate spaces before they are needed for AT&T Park patrons. Approximately 600 of the parking spaces that would make up the evening demand for the project are short-term parking spaces generated by restaurants and retail uses. During Giants games, it is anticipated that a large share of the evening demand for the proposed project's restaurants and retail uses would come from game attendees, thereby lowering the overall parking demand and deficit.

Existing AT&T Park event parking on the project site, currently 2,870 spaces (2,170 at Lot A and 700 at Pier 48), would be replaced with a 2,000 parking spaces for ballpark events.

Because any shortfalls in area-wide parking would occur intermittently during Giants games and would be temporary in nature and the robust sustainable transportation options available in the study area, the proposed project would not have a substantial parking deficit and impacts would be ***less-than-significant***.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative impacts is the study area shown in Figure 4.E-1, on page 4.E-4. As discussed in Chapter 4, *Environmental Setting and Impacts*, the cumulative impacts analysis takes into account reasonably foreseeable future development projects in the study area that would contribute to use of the transportation system. The 2040 future cumulative baseline is established using the SF-CHAMP travel demand model that uses a forecast of Citywide growth. The cumulative analysis of transit conditions that uses forecasts from the SF-CHAMP model is, therefore, a projections approach rather than a list-based approach. The model has been reviewed to ensure that it includes travel from expected growth in and near the study area through 2040 in addition to projects included in baseline conditions, including that from buildout of Mission Bay.

CUMULATIVE CONSTRUCTION IMPACTS

Impact C-TR-1. Construction of the proposed project would occur over an approximately 6-year time frame and may overlap with construction of other projects in the vicinity. (Less than Significant)

The construction of the proposed project may overlap with the construction of other reasonably foreseeable projects listed in the Methods for Analysis discussion provided earlier in this section including the Third Street Bridge Rehabilitation Project, the extension of 16th Street to Terry A. Francois Boulevard, the realignment of Terry A. Francois Boulevard between 16th Street and South Street, UCSF LRDP Mission Bay campus projects, and the Pier 70 mixed-use district project.

It is anticipated that construction of the project site over an approximately six-year period ending in 2023 would overlap with the construction activity of other projects in the area, notably the UCSF LRDP projects, planned for construction between 2017 and 2025, and the Pier 70 Mixed-Use District Project. There would be up to a one-year overlap of the proposed project's construction activities with the Third Street Bridge, 16th Street Extension, and Terry A. Francois Boulevard Realignment, all of which are short-term infrastructure projects scheduled for completion in 2018.

Localized cumulative construction-related transportation impacts would occur as a result of reasonably foreseeable projects in the vicinity of the project site that would generate increased traffic at the same time and on the same roads as the proposed project. As part of the

construction permitting process, each development project would be required to work with the various Departments of the City to develop a detailed and coordinated plan that would address construction vehicle routing, traffic control, transit movement, pedestrian movement, and bicycle movement adjacent to the construction area. The cumulative construction-related transportation impacts of the multiple nearby construction projects would occur over an extended duration, and the project sponsor would coordinate with various City departments such as SFMTA and DPW through the SFMTA Transportation Advisory Committee (TASC), a multi-agency body, to develop coordinated plans that would address construction-related vehicle routing, pedestrian movements, and bicycle movements adjacent to the construction area for the duration of the construction overlap.

Overall, because proposed project's construction activities would be temporary and limited in duration, and are required to be conducted in accordance with City requirements, the proposed project would not contribute considerably to the cumulative construction-related transportation impacts. Furthermore, proposed project Improvement Measure I-TR-1.1: Construction Management Plan would further reduce the proposed project's ***less-than-significant*** impacts related to potential conflicts between construction activities and pedestrians, cyclists, transit, and autos, and includes provisions for construction truck traffic management, construction worker parking plan, project construction updates for existing businesses and residents, and carpool and transit access for construction workers. Therefore, for the above reasons, the proposed project, in combination with past, present and reasonably foreseeable development in San Francisco, would not contribute considerably to the significant cumulative construction-related transportation impacts, and the project's cumulative impact would be ***less than significant***.

CUMULATIVE VMT IMPACTS

Impact C-TR-2. The proposed project's incremental effects on VMT would not be significant when viewed in combination with past, present, and reasonably foreseeable future projects. (Less than Significant)

San Francisco 2040 cumulative conditions were projected using a SF-CHAMP model run, using the same methodology as outlined for existing conditions, but including residential and job growth estimates and reasonably foreseeable transportation investments through 2040, as shown in Table 4.E-34, on the following page. Projected 2040 average daily VMT per capita for residential uses is 2.6 for the TAZ where the project is located (TAZ 655). This is 84 percent below the 2040 projected regional average daily VMT per capita of 16.1 for residential uses. Projected 2040 average daily VMT per capita for office uses is 8.6 for the project's TAZ, 50 percent below the 2040 projected regional average daily VMT per capita of 17.1 for office uses. Projected 2040 average daily VMT per capita for retail uses is 12.4 for the proposed project's TAZ, 15 percent less than the 2040 projected regional average daily VMT per capita of 14.6 for retail uses.

TABLE 4.E-34. YEAR 2040 DAILY VEHICLE MILES TRAVELED

Land Use	Bay Area VMT Regional Average	TAZ 655 VMT	Percent TAZ 655 Below Regional Average
Households (Residential)	16.1	2.6	-84%
Employment (Office)	17.1	8.6	-50%
Visitors (Retail)	14.6	12.4	-15%

Because the project site is located in an area where VMT is 15 percent or more below the projected 2040 regional averages for residential, office, and retail uses, the proposed project's incremental effects would not be significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The proposed project is not a transportation project. However, the proposed project would include features that would alter the transportation network. As discussed in the evaluation of project impacts, these features fit within the general types of projects identified above that would not substantially induce automobile travel.[69]

Based on the above factors and data demonstrating San Francisco's low per-household GHG generation, GHG reductions exceeding BAAQMD and state GHG reductions goals, and consistency with Plan Bay Area, the Planning Department has determined that regardless of any increase in VMT and GHG emissions, if a project is located within an area where the percentage by which per capita VMT is more than 15 percent below the projected 2040 per capita regional averages for residential, office, and retail uses, the project's incremental effects on VMT would not be significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

San Francisco also complies with and exceeds Plan Bay Area GHG reduction targets and is on a trajectory to meet the GHG reduction goals established by AB 32 and SB 375. The proposed project is a mixed-use infill project located immediately adjacent to major transit lines and stations. The proposed project would construct active transportation improvements, including a pedestrian-oriented internal street network and a segment of the Blue Greenway along the San Francisco waterfront. The proposed project would thus be consistent with the GHG reduction goals in Plan Bay Area. Therefore, the proposed project would not have a considerable contribution to any substantial cumulative increase in automobile travel. Cumulative VMT impacts are considered ***less than significant***.

[69] Governor's 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)*, page 28, January 20, 2016.

CUMULATIVE TRAFFIC IMPACTS

The proposed project would have a significant cumulative impact on traffic if the project in combination with other long-term (by 2040) forecast growth, would cause a major traffic hazard in the study area and the project would make a considerable contribution to this cumulative traffic hazard. In general, the proposed project and other local and regional growth would add vehicle trips to surrounding roadways; however, a general increase in traffic in and of itself would not be considered a traffic hazard.

Impact C-TR-3. The proposed project would not contribute to a major traffic hazards. (Less than Significant with Mitigation)

Although the proposed project is expected to increase vehicle, bicycle, and pedestrian travel in the area, the existing local roadways are generally designed to adopted design standards, which are developed to ensure the safe circulation for all modes, including conflicts between vehicles and other modes. Consistent with the City's Better Streets Plan and Transit First Policy, roadway improvements throughout the city, including the study area, are contemplated to improve overall safety and encourage sustainable modes of transportation. Future growth is expected to increase traffic volumes somewhat in the future. As described earlier, the proposed project's internal roadway system would be designed to reduce traffic speeds and promote walking and bicycling. Other long-term forecast changes in the study area are also anticipated to encourage bicycling, walking, and transit use and expected to further enhance area safety.

The Golden State Warriors Event Center would be constructed and operational under cumulative conditions. The Warriors event center project includes a detailed Transportation Management Plan[70] to ensure that travelers in the area are accommodated efficiently, with minimal disruptions to bicyclists, pedestrians, transit, and emergency vehicles.

Under 2040 cumulative conditions, development projects in Mission Bay including the proposed project would provide new roadways, bicycle facilities, sidewalks and enhanced intersection crossing treatments, traffic control devices, and transportation wayfinding. The Giants currently have a Transportation Management Plan (TMP) and Parking Control Officers (PCOs) are deployed during major events at AT&T Park at key intersections to monitor and manage traffic as needed. The Golden State Warriors also have a TMP for the Event Center that includes commitments to provide transit service and deploy PCOs at key intersections during Warriors' games and major overlapping events at AT&T Park. Therefore, for these reasons, the proposed project, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less than significant*** cumulative traffic hazard impacts.

[70] Event Center and Mixed-Use Development at Mission Bay Blocks 29–32, Draft Subsequent EIR, Volume 3, Appendices, Final Transportation Management Plan (TMP-1), June 5, 2015.

Under Baseline plus Project conditions, the project would result in a significant traffic hazard impact, given the parking garage queues and their impact on the Long Bridge Street/Bridgeview Street intersection, with implementation of Mitigation Measure M-TR-3, reducing impacts to ***less-than-significant*** levels by prohibiting left-turn movements at the eastbound driveway for the Block D2 parking garage on Long Bridge Street.

Thus, long-term forecast traffic hazards are not expected in the study area, and the proposed project's contribution to cumulative traffic hazard impacts is considered ***less than significant with mitigation***.

CUMULATIVE TRANSIT IMPACTS

MUNI TRANSIT CAPACITY UTILIZATION ANALYSIS

Impact C-TR-4. The proposed project would contribute considerably to a significant cumulative transit impact because it would increase ridership by more than 5 percent on one individual Muni route that would exceed 85 percent capacity utilization. (Significant and Unavoidable with Mitigation)

MUNI DOWNTOWN SCREENLINES, SUBCORRIDORS, AND INDIVIDUAL ROUTES

Table 4.E-35A, on the next page, and Table 4.E-36A, page 4.E-162, present ridership and capacity utilization data for Muni screenlines and subcorridors, with project-generated transit trips added to the cumulative ridership for the High Residential Assumption in the a.m./p.m. peak hours. Table 4.E-35B, page 4.E-161, and Table 4.E-36B, page 4.E-163, present ridership and capacity utilization data for individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines for the High Residential Assumption in the a.m./p.m. peak hours. As shown in the tables, the proposed project would add transit riders to several Muni transit subcorridors and individual routes that would exceed Muni's capacity utilization standard of 85 percent.

Table 4.E-37A, page 4.E-164, and Table 4.E-38A, page 4.E-166, present ridership and capacity utilization data for Muni screenlines and subcorridors, with project-generated transit trips added to the cumulative ridership for the High Commercial Assumption in the a.m./p.m. peak hours. Table 4.E-37B, page 4.E-165, and Table 4.E-38B, page 4.E-167, present ridership and capacity utilization data for individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines for the High Commercial Assumption in the a.m./p.m. peak hours. As shown in the tables, with the addition of project-generated transit trips, some Muni transit subcorridors and individual routes would exceed Muni's capacity utilization standard of 85 percent.

TABLE 4.E-35A. MUNI DOWNTOWN SCREENLINES – A.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Cumulative (IB)			Cumulative Plus Project (IB)			
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
Northeast							
Kearny/Stockton	7,394	9,473	78%	57	7,451	79%	0.8%
Other lines	758	1,785	42%	101	859	48%	11.8%
Screenline Total	*8,152*	*11,258*	72%	*158*	*8,310*	74%	1.9%
Northwest							
Geary	2,673	3,763	71%	0	2,673	71%	0.0%
California	1,989	2,306	**86%**	0	1,989	**86%**	0.0%
Sutter/Clement	581	756	77%	0	581	77%	0.0%
Fulton/Hayes	1,962	1,977	**99%**	0	1,962	**99%**	0.0%
Balboa	690	1,008	68%	0	690	68%	0.0%
Screenline Total	*7,895*	*9,810*	80%	*0*	*7,895*	80%	0.0%
Southeast							
Third Street	2,422	5,712	42%	207	2,629	46%	7.9%
Mission	3,117	3,008	**104%**	0	3,117	**104%**	0.0%
San Bruno/Bayshore	1,952	2,197	**89%**	0	1,952	**89%**	0.0%
Other lines	1,795	2,027	**89%**	87	1,882	**93%**	4.6%
Screenline Total	*9,286*	*12,944*	*72%*	*294*	*9,580*	*74%*	*3.1%*
Southwest							
Subway lines	6,314	7,020	**90%**	173	6,487	**92%**	2.7%
Haight/Noriega	1,415	1,596	**89%**	0	1,415	**89%**	0.0%
Other lines	175	560	31%	0	175	31%	0.0%
Screenline Total	*7,904*	*9,176*	**86%**	*173*	*8,077*	**88%**	2.1%
Muni Screenlines Total	*33,237*	*43,188*	*77%*	*625*	*33,862*	*78%*	*1.8%*
Project-Specific Cordon							
Project-Specific Cordon Total	*5,541*	*10,994*	*50%*	*401*	*5,941*	*54%*	6.74%
Individual Routes at Project-Specific Cordon							
	Cumulative			**Cumulative Plus Project**			
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
30 Stockton IB	215	705	30%	50	265	38%	18.87%
30 Stockton OB	478	705	68%	29	507	72%	5.72%
45 Union/Stockton IB	606	473	**128%**	7	613	**130%**	1.14%
45 Union/Stockton OB	485	473	**103%**	4	489	**103%**	0.82%
N Judah IB	382	2,596	15%	92	474	18%	19.41%
N Judah OB	398	2,596	15%	54	452	17%	11.95%
T Third IB	1,554	5,712	27%	350	1,905	33%	18.39%
T Third OB	3,327	5,712	58%	207	3,534	62%	5.84%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-35B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – A.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Cumulative (IB)			Cumulative Plus Project (IB)			
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	% Contribution
Northeast/Other Lines							
E Embarcadero	75	280	27%	11	86	31%	12.79%
F Market and Wharves	315	560	56%	0	315	56%	0.00%
10 Townsend	259	630	41%	68	327	52%	20.80%
11 Downtown Circ.	109	315	35%	22	131	42%	16.79%
12 Folsom Pacific	—	—	—	—	—	—	—
Southeast/Other Lines							
J Church	915	893	**102%**	0	915	**102%**	0.00%
10 Townsend	544	630	**86%**	51	595	**94%**	8.57%
12 Folsom Pacific	—	—	—	—	—	—	—
19 Polk	160	252	63%	0	160	63%	0.00%
27 Bryant	176	252	70%	36	212	84%	16.98%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies,* May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-36A. MUNI DOWNTOWN SCREENLINES – P.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Cumulative (OB)			Cumulative Plus Project (OB)			
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
Northeast							
Kearny/Stockton	6,295	8,329	76%	56	6,351	76%	0.9%
Other lines	1229	2,065	60%	101	1,330	64%	7.6%
Screenline Total	*7,524*	*10,394*	*72%*	*157*	*7,681*	*74%*	*2.0%*
Northwest							
Geary	2,996	3,621	83%	0	2,996	83%	0.0%
California	1,766	2,021	**87%**	0	1,766	**87%**	0.0%
Sutter/Clement	749	756	**99%**	0	749	**99%**	0.0%
Fulton/Hayes	1,762	1,878	**94%**	0	1,762	**94%**	0.0%
Balboa	776	974	80%	0	776	80%	0.0%
Screenline Total	*8,049*	*9,250*	***87%***	*0*	*8,049*	***87%***	*0.0%*
Southeast							
Third Street	2,300	5,712	40%	276	2,576	45%	10.7%
Mission	2,673	3,008	**89%**	0	2,673	**89%**	0.0%
San Bruno/Bayshore	1,817	2,134	**85%**	0	1,817	**85%**	0.0%
Other lines	1,582	1,927	82%	102	1,684	**87%**	6.1%
Screenline Total	*8,372*	*12,781*	*66%*	*378*	*8,750*	*68%*	*4.3%*
Southwest							
Subway lines	5,692	6,804	84%	170	5,862	**86%**	2.9%
Haight/Noriega	1,265	1,596	79%	0	1,265	79%	0.0%
Other lines	380	840	45%	0	380	45%	0.0%
Screenline Total	*7,337*	*9,240*	*79%*	*170*	*7,507*	*81%*	*2.3%*
Muni Screenlines Total	*31,282*	*41,665*	*75%*	*705*	*31,987*	*77%*	*2.2%*
Project-Specific Cordon							
Project-Specific Cordon Total	*5,552*	*10,805*	*51%*	*532*	*6,084*	*56%*	8.74%
Individual Routes at Project-Specific Cordon							
	Cumulative			**Cumulative Plus Project**			
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
30 Stockton IB	347	705	49%	40	387	55%	10.34%
30 Stockton OB	400	705	57%	49	449	64%	10.91%
45 Union/Stockton IB	297	473	63%	5	302	64%	1.66%
45 Union/Stockton OB	323	473	68%	7	330	70%	2.12%
N Judah IB	338	2,596	13%	73	411	16%	17.76%
N Judah OB	265	2,596	10%	89	354	14%	25.14%
T Third IB	3,758	5,712	66%	276	4,034	71%	6.84%
T Third OB	2,219	5,712	39%	335	2,554	45%	13.11%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-36B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – P.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Cumulative (IB)			Cumulative Plus Project (IB)			
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	% Contribution
Northeast/Other Lines							
E Embarcadero	96	280	34%	10	106	38%	9.43%
F Market and Wharves	490	840	58%	0	490	58%	0.00%
10 Townsend	482	630	77%	72	554	**88%**	13.00%
11 Downtown Circ.	161	315	51%	19	180	57%	10.56%
12 Folsom Pacific	—	—	—	—	—	—	—
Southeast/Other Lines							
J Church	655	793	**83%**	0	655	**83%**	0.00%
10 Townsend	627	630	**100%**	64	691	**110%**	9.26%
12 Folsom Pacific	—	—	—	—	—	—	—
19 Polk	160	252	63%	0	160	63%	0.00%
27 Bryant	140	252	56%	38	178	71%	21.35%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies,* May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-37A. MUNI DOWNTOWN SCREENLINES – A.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Cumulative (IB)			Cumulative Plus Project (IB)			
Muni Screenline	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	% Contribution
Northeast							
Kearny/Stockton	7,394	9,473	78%	68	7,462	79%	0.9%
Other lines	758	1,785	42%	119	877	49%	13.6%
Screenline Total	*8,152*	*11,258*	72%	*187*	*8,339*	74%	2.2%
Northwest							
Geary	2,673	3,763	71%	0	2,673	71%	0.0%
California	1,989	2,306	**86%**	0	1,989	**86%**	0.0%
Sutter/Clement	581	756	77%	0	581	77%	0.0%
Fulton/Hayes	1,962	1,977	**99%**	0	1,962	**99%**	0.0%
Balboa	690	1,008	68%	0	690	68%	0.0%
Screenline Total	*7,895*	*9,810*	80%	*0*	*7,895*	80%	0.0%
Southeast							
Third Street	2,422	5,712	42%	185	2,607	46%	7.1%
Mission	3,117	3,008	**104%**	0	3,117	**104%**	0.0%
San Bruno/Bayshore	**1,952**	**2,197**	**89%**	**0**	**1,952**	**89%**	**0.0%**
Other lines	1,795	2,027	**89%**	90	1,885	**93%**	4.8%
Screenline Total	*9,286*	*12,944*	72%	*275*	*9,561*	*74%*	*2.9%*
Southwest							
Subway lines	6,314	7,020	**90%**	210	6,524	**93%**	3.2%
Haight/Noriega	1,415	1,596	**89%**	0	1,415	**89%**	0.0%
Other lines	175	560	31%	0	175	31%	0.0%
Screenline Total	*7,904*	*9,176*	**86%**	*210*	*8,114*	**88%**	2.6%
Muni Screenlines Total	*33,237*	*43,188*	77%	*672*	*33,909*	*79%*	*2.0%*
Project-Specific Cordon							
Project-Specific Cordon Total	*5,541*	*10,994*	*50%*	*364*	*5,905*	*54%*	6.17%
Individual Routes at Project-Specific Cordon							
	Cumulative			Cumulative Plus Project			
Route/Direction	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	% Contribution
30 Stockton IB	215	705	30%	60	275	39%	21.82%
30 Stockton OB	478	705	68%	27	505	72%	5.35%
45 Union/Stockton IB	606	473	**128%**	8	614	**130%**	1.30%
45 Union/Stockton OB	485	473	**103%**	4	489	**103%**	0.82%
N Judah IB	382	2,596	15%	111	493	19%	22.52%
N Judah OB	398	2,596	15%	49	447	17%	10.96%
T Third IB	1,554	5,712	27%	418	1,972	35%	21.19%
T Third OB	3,327	5,712	58%	185	3,513	61%	5.28%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-37B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – A.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Cumulative (IB)			Cumulative Plus Project (IB)			
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	% Contribution
Northeast/Other Lines							
E Embarcadero	75	280	27%	12	87	31%	13.79%
F Market and Wharves	315	560	56%	0	315	56%	0.00%
10 Townsend	259	630	41%	82	341	54%	24.05%
11 Downtown Circ.	109	315	35%	25	134	43%	18.66%
12 Folsom Pacific	—	—	—	—	—	—	—
Southeast/Other Lines							
J Church	915	893	**102%**	0	915	**102%**	0.00%
10 Townsend	544	630	**86%**	55	599	**95%**	9.18%
12 Folsom Pacific	—	—	—	—	—	—	—
19 Polk	160	252	63%	0	160	63%	0.00%
27 Bryant	176	252	70%	35	211	84%	16.59%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

TABLE 4.E-38A MUNI DOWNTOWN SCREENLINES – P.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Cumulative (OB)			Cumulative Plus Project (OB)			
Muni Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
Northeast							
Kearny/Stockton	6,295	8,329	76%	63	6,358	76%	1.0%
Other lines	1,229	2,065	60%	111	1340	65%	8.3%
Screenline Total	*7,524*	*10,394*	72%	*174*	*7,698*	74%	2.3%
Northwest							
Geary	2,996	3,621	83%	0	2,996	83%	0.0%
California	1,766	2,021	**87%**	0	1,766	**87%**	0.0%
Sutter/Clement	749	756	**99%**	0	749	**99%**	0.0%
Fulton/Hayes	1,762	1,878	**94%**	0	1,762	**94%**	0.0%
Balboa	776	974	80%	0	776	80%	0.0%
Screenline Total	*8,049*	*9,250*	**87%**	*0*	*8,049*	**87%**	0.0%
Southeast							
Third Street	2,300	5,712	40%	253	2,553	45%	9.9%
Mission	2,673	3,008	**89%**	0	2,673	**89%**	0.0%
San Bruno/Bayshore	1,817	2,134	**85%**	0	1,817	**85%**	0.0%
Other lines	1,582	1,927	**82%**	97	1,679	**87%**	5.8%
Screenline Total	*8,372*	*12,781*	66%	*350*	*8,722*	*68%*	*4.0%*
Southwest							
Subway lines	5,692	6,804	84%	201	5,893	**87%**	3.4%
Haight/Noriega	1,265	1,596	79%	0	1,265	79%	0.0%
Other lines	380	840	45%	0	380	45%	0.0%
Screenline Total	*7,337*	*9,240*	79%	*201*	*7,538*	82%	2.7%
Muni Screenlines Total	*31,282*	*41,665*	75%	*725*	*32,007*	*77%*	*2.3%*
Project-Specific Cordon							
Project-Specific Cordon Total	*5,552*	*10,805*	*51%*	*488*	*6,040*	*56%*	8.08%
Individual Routes at Project-Specific Cordon							
	Cumulative			**Cumulative Plus Project**			
Route/Direction	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
30 Stockton IB	347	705	49%	36	383	54%	9.40%
30 Stockton OB	400	705	57%	54	454	64%	11.89%
45 Union/Stockton IB	297	473	63%	5	302	64%	1.66%
45 Union/Stockton OB	323	473	68%	9	332	70%	2.71%
N Judah IB	338	2,596	13%	67	405	16%	16.54%
N Judah OB	265	2,596	10%	103	368	14%	27.99%
T Third IB	3,758	5,712	66%	253	4,011	70%	6.30%
T Third OB	2,219	5,712	39%	389	2,608	46%	14.91%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater.

TABLE 4.E-38B. MUNI DOWNTOWN SCREENLINES: ROUTES FOR OTHER LINES SUBCORRIDORS – P.M. PEAK-HOUR CUMULATIVE AND CUMULATIVE PLUS-PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

Screenline/Subcorridor Individual Muni Routes	Cumulative (IB)			Cumulative Plus Project (IB)			
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	% Contribution
Northeast/Other Lines							
E Embarcadero	96	280	34%	9	105	38%	8.57%
F Market and Wharves	490	840	58%	0	490	58%	0.00%
10 Townsend	482	630	77%	84	566	**90%**	14.84%
11 Downtown Circ.	161	315	51%	18	179	57%	10.06%
12 Folsom Pacific	—	—	—	—	—	—	—
Southeast/Other Lines							
J Church	655	793	83%	0	655	83%	0.00%
10 Townsend	627	630	**100%**	64	691	**110%**	9.26%
12 Folsom Pacific	—	—	—	—	—	—	—
19 Polk	160	252	63%	0	160	63%	0.00%
27 Bryant	140	252	56%	33	173	69%	19.08%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. SFMTA, individual route ridership data. See Appendix 4-2 for transit line capacity calculations.

Notes:

The ridership and capacity data presented above are at the screenline maximum load point.

The a.m. peak-hour inbound and p.m. peak-hour outbound data are presented because those peak directions have higher ridership than the opposing directions of travel.

Bold indicates capacity utilization of 85 percent or greater.

Capacity utilization at the four downtown Muni screenlines would range from a low of 68 percent at the southeast screenline in the p.m. peak hour to a high of 88 percent at the southwest screenline in the a.m. peak hour under cumulative conditions, as shown in Tables 4.E-35A to 4.E-38A, pages 4.E-160 to 4.E-166. Both the High Residential Assumption and High Commercial Assumption would add riders to northeast, southeast, and southwest screenlines, but neither would add any riders to the northwest screenline. The addition of riders from the proposed project would increase capacity utilization but would not cause any screenlines to operate above 85 percent capacity utilization, with the exception of the southwest screenline during the a.m. peak hour and the northwest screenline during the p.m. peak hour. For both the High Residential Assumption and High Commercial Assumption, the addition of riders from the proposed project would increase capacity utilization on the southwest screenline from 86 to 88 percent during the a.m. peak hour. The northwest screenline would operate at 87 percent capacity utilization during the p.m. peak hour. The addition of project trips would cause an increase in ridership of less than 5 percent on the southwest screenline during the a.m. peak hour and the northwest screenline during the p.m. peak hour, under the High Residential Assumption and High Commercial Assumption.

Several subcorridors within the Muni downtown screenlines would exceed 85 percent capacity utilization under cumulative conditions. Subcorridors that would exceed 85 percent capacity utilization during the a.m. peak hour include the California and Fulton/Hayes subcorridors in the northwest screenline; the Mission, San Bruno/Bayshore, and "other lines" subcorridors in the southeast screenline; and the subway lines and Haight/Noriega subcorridors in the southwest screenline under both the High Commercial Assumption and High Residential Assumption. Subcorridors that would exceed 85 percent capacity utilization during the p.m. peak hour include the California, Sutter/Clement, and Fulton/Hayes subcorridors in the northwest screenline; the Mission, San Bruno/Bayshore, and "other lines" subcorridors in the southeast screenline; and the subway lines subcorridor in the southwest screenline under both the High Commercial Assumption and High Residential Assumption. The addition of project trips would cause an increase in ridership of less than 5 percent on all the above subcorridors, with one exception. The "other lines" subcorridor within the southeast screenline would operate at 87 percent under both the High Residential Assumption and High Commercial Assumption in the p.m. peak hour. The addition of project trips to this subcorridor would contribute 5.8 percent for the High Residential Assumption and 6.1 percent for the High Commercial Assumption scenario in the a.m. peak hour. As noted below, additional analysis of the southeast "other lines" subcorridor indicates that the increase is due to conditions on the 10 Townsend line.

Table 4.E-35B, page 4.E-161; Table 4.E-36B, page 4.E-163; Table 4.E-37B, page 4.E-165; and Table 4.E-38B, page 4.E-167, present ridership and capacity utilization data for individual Muni routes that comprise the "other lines" subcorridor of the northeast and southeast screenlines

for both the High Commercial Assumption and High Residential Assumption scenarios. The assessment of the "other lines" subcorridor of the southeast screenline indicates that the J Church would exceed the 85 percent threshold during the a.m. peak hour, but the project would add less than 5 percent to ridership of this line.

An evaluation of the remaining individual Muni routes within the southeast "other lines" subcorridor indicates that the 10 Townsend line would operate at 95 percent under the High Residential Assumption and 94 percent under the High Commercial Assumption in the a.m. peak hour with the addition of project transit trips. The addition of project trips to the 10 Townsend line would contribute 9.2 percent for the High Residential Assumption and 8.6 percent for the High Commercial Assumption scenario in the a.m. peak hour. The 10 Townsend line would also exceed the 85 percent utilization threshold during the p.m. peak hour for both the High Residential Assumption and the High Commercial Assumption and contribute more than 5 percent to riders. Thus the project would make a considerable contribution to cumulative impacts on the 10 Townsend under 2040 cumulative conditions because the route would exceed 85 percent utilization, and the project would add more than 5 percent to the cumulative ridership. This is a ***significant*** cumulative impact.

M-C-TR-4: Provide Fair-Share Contribution to Improve 10 Townsend Line Capacity Proposed Project

Upon completion and occupancy of Phase 1 and upon completion and occupancy of each subsequent phase of the proposed project as defined in the Disposition and Development Agreement, the project sponsor shall fund a transit capacity study to be reviewed and approved by the SFMTA. The project sponsor shall obtain from SFMTA the current ridership on the 10 Townsend and conduct an assessment of the capacity utilization at the screenline's Maximum Load Point (MLP) for weekday AM and PM peak hour conditions.

If the capacity utilization exceeds 85 percent, a fair share payment shall be made to SFMTA by the project sponsor, calculated as further provided in a Transit Mitigation Agreement. Such payment shall be calculated in light of the project's progress towards one or the other of the development scenario (i.e. High Commercial or High Residential) as reflected by all phases of the project that have been completed up to such date. The fair share contributions by phase differ by scenario because the number of transit riders varies due to different mixes of land use.

If the capacity utilization based on SFMTA's ridership data is less than 85 percent, then the project sponsor's fair share payment for that phase shall be $0 and the process will repeat at the next subsequent phase**.** Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts.

The project sponsor shall enter into a Transit Mitigation Agreement with the SFMTA under which the agreement shall provide for the project sponsor to make a fair share contribution to the cost of providing additional bus service or improving service on the 10 Townsend by paying a fee. The fair share contribution as documented in the Transportation Impact Study from the proposed project shall not exceed the following amounts, in total across all phases:

a. $391,179 for High Commercial

b. $324,595 for High Residential

SFMTA may determine that other measures to increase capacity along the route would be more desirable than adding buses and may use the funds provided by the project sponsor to implement these other measures, which include but are not limited to the following measures:

1. Convert to using higher-capacity vehicles on the 10 Townsend route. In this case, the project sponsor's fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.

2. Instead of adding more buses to a congested route, it would be more desirable to increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements.

3. Another option to increase capacity along the corridor is to add a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles

Implementing transit line improvements as identified in Mitigation Measure M-C-TR-4 are expected to allow Muni to maintain transit headways, and would reduce the proposed project's impact on the 10 Townsend to ***less-than-significant*** levels. However, because the method and total cost of providing additional service and SFMTA's ability to implement improvements is uncertain, the proposed project's impact would be ***significant and unavoidable with mitigation***.

The 10 Townsend is a top SFMTA priority, identified as part of Muni Forward. The SFMTA is committed to augmentation on this route as soon as feasible. The operations of the 10 Townsend Muni line can only be improved by increasing its capacity, transit frequency, and/or reducing delay through transit priority treatments along the line, which requires providing more buses serving this route or transit enhancements on the line. The SFMTA is committed to augmenting and maintaining the fleet and related facilities to ensure service accommodates additional ridership on lines identified as having capacity impacts identified as capacity mitigation, subject to availability of funding and consistent with service priorities. While SFMTA has not at this time determined the method it would use to increase capacity on the 10 Townsend, SFMTA has determined that the cost of providing additional bus capacity or improving service is a reasonable method for determining the cost of mitigation. However, the method and total cost of providing additional service on this line is not known at this time. Also, SFMTA would be responsible for implementing improvements and its ability to do so is uncertain. Therefore, the effectiveness of fair-share mitigation is unknown.

MUNI PROJECT-SPECIFIC CORDON

The project-specific transit cordon was established to measure the number of transit trips traveling between the proposed project and the San Francisco Financial District through the SOMA neighborhood. The project-specific cordon encompasses transit routes that cross Townsend Street, from Fifth Street to Embarcadero and/or from Fifth Street between Townsend Street and Berry Street.

The project-specific cordon would operate at 34 percent utilization in the a.m. peak hour and 31 percent utilization in the p.m. peak hour under cumulative conditions, as shown in Tables 4.E-35 to 4.E-38, pages 4.E-160 to 4.E-167. The addition of ridership from the proposed project would increase capacity utilization to a range of 34 to 38 percent under the High Commercial Assumption and High Residential Assumption.

Capacity utilization on the four individual Muni routes that were evaluated as part of the Muni project-specific cordon analysis would range from 13 to 130 percent under cumulative conditions. The 45 Union/Stockton IB route would operate at 130 percent utilization in the a.m. peak hour and 64 percent utilization in the p.m. peak hour for both the High Residential Assumption and High Commercial Assumption. The 45 Union/Stockton OB route would operate at 103 percent utilization in the a.m. peak hour and 70 percent utilization in the p.m. peak hour for both the High Residential Assumption and High Commercial Assumption. The addition of transit trips from the proposed project would result in an increase in riders of less than 5 percent under all scenarios for the 45 Union/Stockton route. The remaining three Muni routes would operate at capacity utilization levels of less than 85 percent under all cumulative scenarios. The 30 Stockton route, which would exceed

85 percent utilization and 5 percentage contribution levels under baseline conditions, would operate at utilization rates of less than 85 percent under cumulative conditions because of future capacity improvements to the route under Muni Forward.

Because the proposed project would not cause the project-specific cordon screenline or individual routes evaluated as part of the project-specific cordon screenline to exceed 85 percent or cause more than a 5 percent capacity utilization increase along any of the individual Muni routes that would exceed 85 percent utilization under the High Residential Assumption or High Commercial Assumption, the project would not make a consideration contribution to 2040 cumulative conditions and the cumulative impact from the project would be ***less than significant***.

REGIONAL TRANSIT CAPACITY UTILIZATION ANALYSIS

Impact C-TR-5. The proposed project would not contribute considerably to significant cumulative impacts on regional transit routes. (*Less than Significant*)

Transit trips were assigned to the regional routes based on the likely origins and destinations of the trips and the available capacity for each regional provider. Table 4.E-39, on the following page, and Table 4.E-40, page 4.E-174, present the ridership and capacity utilization at regional screenlines with project-generated transit trips added to cumulative ridership for the High Residential Assumption in the a.m. and p.m. peak hours. Table 4.E-41, page 4.E-175, and Table 4.E-42, page 4.E-176, present the ridership and capacity utilization at regional screenlines with project-generated transit trips added to cumulative ridership for the High Commercial Assumption in the a.m. and p.m. peak hours in 2040.

REGIONAL TRANSIT ANALYSIS – HIGH RESIDENTIAL ASSUMPTION

The High Residential Assumption would contribute 298 riders from the East Bay, 52 riders from the North Bay, and 265 riders from the South Bay in the inbound direction in the a.m. peak hour, and 284 riders to the East Bay, 52 riders to the North Bay, and 271 riders to the South Bay in the outbound direction in the p.m. peak hour.

The East Bay regional transit screenlines would not exceed capacity utilization standards in the a.m. and p.m. peak hours under cumulative conditions. The proposed project would increase ridership at the East Bay regional transit screenline by 0.6 percent in the a.m. and p.m. peak hours under the High Residential Assumption. Although the BART line to the East Bay would exceed its capacity utilization in the a.m. peak hour and the p.m. peak hour, the proposed project would contribute less than 5 percent to total ridership on the East Bay regional transit screenline.

Because the proposed project would not cause any of the regional screenlines to exceed 100 percent or result in more than a 5 percent capacity utilization increase in any of the regional screenlines and exceed 100 percent utilization under cumulative conditions under the High Residential Assumption, project contributions to cumulative impacts would be ***less-than-significant***. No mitigation is required.

TABLE 4.E-39. REGIONAL TRANSIT SCREENLINES – A.M. PEAK HOUR CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Cumulative Conditions (Inbound)			Cumulative plus Project Conditions (Inbound)			
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
East Bay							
BART	38,000	32,100	**118%**	253	38,253	**119%**	0.7%
AC Transit	7,000	12,000	58%	30	7,030	59%	0.4%
Ferries	4,682	5,940	79%	15	4,697	79%	0.3%
Screenline Total	*49,682*	*50,040*	*99%*	*298*	*49,980*	**100%**	0.6%
North Bay							
Golden Gate Transit Bus	1,990	2,543	78%	31	2,021	79%	1.5%
Ferries	1,619	1,959	83%	21	1,640	84%	1.3%
Screenline Total	*3,609*	*4,502*	*80%*	*52*	*3,661*	*81%*	*1.4%*
South Bay							
BART	21,000	28,808	73%	199	21,199	74%	0.9%
Caltrain	2,310	3,600	64%	53	2,363	66%	2.2%
SamTrans	271	520	52%	13	284	55%	4.6%
Screenline Total	*23,581*	*32,928*	*72%*	*265*	*23,846*	*72%*	*1.1%*
Regional Screenlines Total	*76,872*	*87.470*	*88%*	*615*	*77,487*	*89%*	*0.8%*

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

TABLE 4.E-40. REGIONAL TRANSIT SCREENLINES – P.M. PEAK HOUR CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS (HIGH RESIDENTIAL ASSUMPTION)

	Cumulative Conditions (Inbound)			Cumulative plus Project Conditions (Inbound)			
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
East Bay							
BART	36,000	32,100	**112%**	242	36,242	**113%**	0.7%
AC Transit	7,000	12,000	58%	28	7,028	59%	0.4%
Ferries	5,319	5,940	90%	14	5,333	90%	0.3%
Screenline Total	*48,319*	*50,040*	*97%*	*284*	*48,603*	*97%*	*0.6%*
North Bay							
Golden Gate Transit Bus	2,070	2,817	74%	31	2,101	75%	1.5%
Ferries	1,619	1,959	83%	21	1,640	84%	1.3%
Screenline Total	*3,689*	*4,776*	*77%*	*52*	*3,741*	*78%*	*1.4%*
South Bay							
BART	20,000	28,808	69%	203	20,203	70%	1.0%
Caltrain	2,529	3,600	70%	54	2,583	72%	2.1%
SamTrans	150	320	47%	14	164	51%	8.5%
Screenline Total	*22,679*	*32,728*	*69%*	*271*	*22,950*	*70%*	*1.2%*
Regional Screenlines Total	*74,687*	*87,544*	*85%*	*607*	*75,294*	*86%*	*0.8%*

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 85 percent or greater. Shaded indicates significant project impacts.

TABLE 4.E-41. REGIONAL TRANSIT SCREENLINES – A.M. PEAK HOUR CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Cumulative Conditions (Inbound)			Cumulative plus Project Conditions (Inbound)			
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
East Bay							
BART	38,000	32,100	**118%**	301	38,301	**119%**	0.8%
AC Transit	7,000	12,000	58%	35	7,035	59%	0.5%
Ferries	4,682	5,940	79%	18	4,700	79%	0.4%
Screenline Total	*49,682*	*50,040*	*99%*	*354*	*50,036*	***100%***	0.7%
North Bay							
.Golden Gate Transit Bus	1,990	2,543	78%	40	2,030	80%	2.0%
Ferries	1,619	1,959	83%	27	1,646	84%	1.6%
Screenline Total	*3,609*	*4,502*	*80%*	*67*	*3,676*	82%	1.8%
South Bay							
BART	21,000	28,808	73%	196	21,196	74%	0.9%
Caltrain	2,310	3,600	64%	52	2,362	66%	2.2%
SamTrans	271	520	52%	13	284	55%	4.6%
Screenline Total	*23,581*	*32,928*	*72%*	*261*	*23,842*	72%	1.1%
Regional Screenlines Total	*76,872*	*87.470*	*88%*	*682*	*77,554*	89%	0.9%

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

TABLE 4.E-42. REGIONAL TRANSIT SCREENLINES – P.M. PEAK HOUR CUMULATIVE AND CUMULATIVE PLUS PROJECT CONDITIONS (HIGH COMMERCIAL ASSUMPTION)

	Cumulative Conditions (Inbound)			Cumulative plus Project Conditions (Inbound)			
Regional Screenline	**Ridership**	**Capacity**	**Utilization**	**Project Trips**	**Ridership**	**Utilization**	**% Contribution**
East Bay							
BART	36,000	32,100	**112%**	282	36,282	**113%**	0.8%
AC Transit	7,000	12,000	58%	33	7,033	59%	0.5%
Ferries	5,319	5,940	90%	17	5,336	90%	0.3%
Screenline Total	*48,319*	*50,040*	*97%*	*332*	*48,651*	*97%*	*0.7%*
North Bay							
Golden Gate Transit Bus	2,070	2,817	74%	39	2,109	75%	1.8%
Ferries	1,619	1,959	83%	26	1,645	84%	1.6%
Screenline Total	*3,689*	*4,776*	*77%*	*65*	*3,754*	*79%*	*1.7%*
South Bay							
BART	20,000	28,808	69%	195	20,195	70%	1.0%
Caltrain	2,529	3,600	70%	52	2,581	72%	2.0%
SamTrans	150	320	47%	13	163	51%	8.0%
Screenline Total	*22,679*	*32,728*	*69%*	*260*	*22,939*	*70%*	*1.1%*
Regional Screenlines Total	*74,687*	*87,544*	*85%*	*657*	*75,344*	*86%*	*0.9%*

Source: San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015. See Appendix 4-2 for transit line capacity calculations.

Notes: **Bold** indicates capacity utilization of 100 percent or greater. Shaded indicates significant project impacts.

REGIONAL TRANSIT ANALYSIS – HIGH COMMERCIAL ASSUMPTION

The High Commercial Assumption would contribute 354 transit riders from the East Bay, 67 transit riders from the North Bay, and 261 transit riders from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour the proposed project would contribute 332 transit riders to the East Bay, 65 transit riders to the North Bay, and 260 transit riders to the South Bay.

The East Bay regional transit screenlines would not exceed capacity utilization standards in the a.m. and p.m. peak hours under cumulative conditions. The proposed project would increase ridership at the East Bay regional transit screenline by 0.7 percent in the a.m. and p.m. peak hours under the High Commercial Assumption. Although the BART line to the East Bay would exceed its capacity utilization in the a.m. peak hour and p.m. peak hour, the proposed project would contribute less than 5 percent to total ridership on the East Bay regional transit screenline.

Because the proposed project would not cause any of the regional screenlines to exceed 100 percent or cause more than a 5 percent capacity utilization increase in any of the regional screenlines that would exceed 100 percent utilization under cumulative 2040 conditions under the High Commercial Assumption, project contributions to cumulative impacts would be ***less-than-significant.*** No mitigation is required.

TRANSIT DELAY ANALYSIS

Impact C-TR-6. The proposed project would contribute considerably to significant cumulative impacts related to transit delays. (Significant and Unavoidable with Mitigation)

Traffic volumes in the project vicinity would increase between implementation of the proposed project and 2040 cumulative conditions due to buildout of planned Mission Bay developments in the project vicinity. Dedicated transit lanes exist or would be provided by 2040 on Third Street, Fourth Street, Embarcadero, and 16th Street. The T Third will operate in the Central Subway north of King Street. Transit routes that are forecast to be most heavily used under cumulative conditions are located along these four streets that provide dedicated transit lanes.

Impact TR-4 provides a detailed description of the assessment of the potential effects of the project on transit delays that would affect operations of the T Third line. These delays would be caused by the addition of project vehicle trips that would result in queues at the driveways for the proposed project parking garages and or queues at intersections adjacent to the garage facilities.

The queue impact at the Mission Rock Square underground garage would be ***less-than-significant***. The queue impacts at the Mission Rock Street driveways for the Block D2 garage during the a.m. peak hour would cause a ***significant*** transit delay impact. The queue impacts at the southbound left-turn lane at the Third Street/Mission Rock Street intersection during the a.m. peak hour would cause a ***significant*** transit delay impact. This is a **significant** cumulative impact.

Implementation of Mitigation Measure M-TR-6 would resolve transit delay impacts to being ***less than significant***. However, at this time they may not be considered to fully resolve transit delay impacts because, and to the extent that, implementation of some of components of the mitigation (i.e., approval of restriping on Third Street and entering into an Event Management Agreement with the project sponsor to allocate PCOs on site), require SFMTA Board approval, and such approval is currently considered uncertain. Thus, based upon such current uncertainty of full implementation of Mitigation Measure M-TR-6, the proposed project's cumulative impact on transit delay be considered to remain ***significant and unavoidable with mitigation***.

PEDESTRIAN, BICYCLE AND LOADING CONDITIONS

Impact C-TR-7. The proposed project would contribute considerably to significant cumulative pedestrian impacts. (Significant and Unavoidable with Mitigation)

Pedestrian volumes in the project vicinity would increase between implementation of the proposed project and 2040 cumulative conditions due to build-out of planned Mission Bay developments in the project vicinity. As described earlier, the proposed project includes numerous sidewalks, traffic control modifications, and intersection pedestrian crossing treatments that would improve and define the pedestrian network adjacent to the project site.

In addition, there would be a projected increase in background vehicle and bicycle traffic between implementation of the proposed project and 2040 cumulative conditions that could result in increased potential for pedestrian-vehicle and pedestrian-bicycle conflicts. Implementation of Mitigation Measure M-TR-9 would fully resolve pedestrian safety impacts associated with the project such that such impacts would be less than significant. However, at this time, the approval of the signalization improvements is considered somewhat uncertain, because they will require SFMTA Board approval. For that reason, the proposed project's contribution to potential cumulative impacts would be considered to remain ***significant and unavoidable with mitigation***.

M-TR-9: Install Traffic Signal Improvements at Unsignalized Intersections on Fourth Street at Mission Street and Long Bridge Street (see Impact TR-6)

Impact C-TR-8. The proposed project would not contribute considerably to a significant cumulative bicycle impact. (Less than Significant with Mitigation)

Bicycle volumes in the project vicinity would increase between implementation of the proposed project and 2040 cumulative conditions due to build-out of planned Mission Bay developments in the project vicinity. The proposed project includes numerous bicycle facilities, traffic control modifications, and intersection crossing treatments that would improve and define the bicycle network adjacent to the project site. New bicycle facilities such as the Blue Greenway and bike lanes on the 16th Street Extension to Terry A. Francois Boulevard would also be in place.

As noted above, under 2040 cumulative conditions, there is a projected increase in vehicles at intersections in the vicinity of the proposed project, which may result in an increase in vehicle-bicycle conflicts at intersections in the study area. However, the numerous bicycle improvements that would be implemented by the proposed project and other Mission Bay development and infrastructure projects would define the bicycle network and would offset the risks associated with increase in vehicle volumes. For the above reasons, the proposed project's contribution to potential cumulative impacts would be ***less than significant with mitigation***.

M-TR-10: Bicycle-Truck Interface at Pier 48 (see Impact TR-10)

Impact C-TR-9. The proposed project could contribute to a significant cumulative loading impact. (Less than Significant with Mitigation)

Loading impacts are by their nature localized and site-specific. With mitigation, the proposed project would result in a less-than-significant loading impact based on the shortfall in on-street loading facilities proposed compared to the demand, as explained in Impact TR-11. Mitigation Measures M-TR-11.1 and M-TR-11.2 provide for ongoing monitoring and management of commercial loading and deliveries. The shortfall on the project site would not be expected to contribute to any loading impacts from other development projects near the project site. Overall, because loading tends to occur as close to the delivery point as possible, particularly in cases where loading occurs via double-parking, as may be the case within the project site, it is not expected that unmet loading demand associated with the proposed project would be accommodated outside of the project site. Similarly, it is not likely that unmet loading demand from other parts of the study area would interfere with the project site. Thus, there is no significant cumulative loading impact in the project area. Consequently, the project would not make a considerable contribution to cumulative loading impacts and cumulative impacts are ***less than significant with mitigation***.

EMERGENCY VEHICLE ACCESS

Impact C-TR-10. The proposed project would not contribute considerably to a significant cumulative impact on emergency vehicle access. (Less than Significant)

As described above, the proposed project is located adjacent to the Public Safety Building located on Third Street at Mission Rock Street. This facility accommodates the headquarters of the San Francisco Police Department, the new Southern District police station, and a new fire station (i.e., Station 4). The fire station has access on Mission Rock Street between Third Street and Terry A. Francois Boulevard, immediately adjacent to the study area. Fire truck ingress and egress occurs on the south side of Mission Rock Street, approximately 125 feet east of Third Street. The fire station driveway is approximately 56 feet wide. Police vehicles can access the Public Safety Building via two driveways; one is located on China Basin Street and a secondary driveway is located on Mission Rock Street. The proposed project includes implementation of a "keep clear"

zone on Mission Rock Street in front of the police and fire truck access point to ensure that police vehicles and fire trucks are provided clear access and egress. Under cumulative conditions, the emergency vehicles from the public safety building would be able to continue to access this site as necessary to respond to incidents in the area.

Emergency vehicles could use mixed-flow lanes to respond to incidents as needed. In addition, with the implementation of the planned 22 Fillmore Transit Priority Project, transit-only lanes will be implemented adjacent to the curb on 16th Street west of Third Street, and emergency vehicles will be permitted use of the transit-only lanes. The transit-only lanes on 16th Street would have fewer vehicles in them than the adjacent mixed-flow lanes, and would not be subject to any turn restrictions. Persons accessing the UCSF Medical Center emergency room and urgent care center in their personal vehicles during an emergency would, if necessary, also be able to utilize the transit-only lanes to bypass congested segments on 16th Street.

The proposed project would not contribute considerably to cumulative emergency vehicle access impacts in the area. With implementation of transit-only lanes and changes to the number and direction of travel lanes on streets in the vicinity of the proposed project, emergency vehicle providers may adjust travel routes to respond to incidents; however, emergency vehicle access in the area would not be substantially affected. Emergency vehicles would be permitted full use of transit-only lanes and would not be subject to any turn restrictions.

With the addition of the Golden State Warriors Event Center, south of the project site, there will be additional periods of congestion in the area. However, the arena operators are required to provide comprehensive event transportation management strategies to reduce the overall effect of event-related congestion on bicycles, pedestrians, transit, and emergency vehicle operations.

On days with dual events at AT&T Park and at the Golden State Warriors Event Center, traffic conditions and overall congestion levels may be substantial. The proposed project would not schedule an on-site outdoor major special event (i.e., an event not related to a Giants game) with an anticipated attendance of approximately 5,000 persons during the same period of time as a dual Warrior arena and ballpark major event. The Ball Park/Mission Bay Transportation Coordination Committee (BMBTCC) coordinates event schedules and transportation management strategies. SFMTA also has a special events manager to coordinate special events. Relevant transportation plans for special events include but are not limited to the Pacific Bell (now AT&T) Park Transportation Management Plan and the Transportation Management Plan for the Warriors San Francisco Event Center. The Pier 70 Transportation Plan and the Mission Rock Transportation Plan would both have provisions for managing special events. The ability of emergency vehicles to maneuver through the study area via transit-only lanes, combined with the strategies in the Transportation and Event Management Plans described above including a high level of active management from parking control officers who can assist with prioritizing emergency vehicle travel through congestion locations, would mean that emergency vehicles would be able to operate under these conditions. Therefore, for the above

reasons, the proposed project, in combination with past, present, and reasonably foreseeable development in the area, would result in ***less-than-significant*** cumulative emergency vehicle access impacts.

In addition, the TIS analyzed a dual event scenario that added trips from approximately 9,000 attendees from a convention event at the Warriors Event Center to the proposed project's trips in the p.m. peak hour. A convention event, rather than a basketball game, at the Warriors Event Center was selected for analysis as a reasonably conservative assumption, because the convention event scenario adds the most trips to the p.m. peak hour, as the basketball game scenario's peak travel times occur later in the day than the evaluated p.m. peak hour. The analysis concluded that the proposed project, in combination with past, present, and reasonably foreseeable development in San Francisco, including a convention event at the Warriors Event Center, would result in ***less-than-significant*** cumulative emergency vehicle access.

As discussed above, Mitigation Measure M-TR-12 would ensure that the proposed project would be designed to not impede access and to ensure clear ingress/egress for the Police and Fire Departments' vehicles into the Public Safety Building. Thus, with implementation of Mitigation Measure M-TR-12, there would be no cumulative impacts and no cumulatively considerable contribution to significant cumulative impacts related to the Police and Fire Departments' vehicles access to the Public Safety Building.

PARKING

Impact C-TR-11. The proposed project, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative parking impacts. (Less than Significant)

Over time, due to the land use development and increased density anticipated within the city, parking demand and competition for on-street and off-street parking will likely increase. As described in Impact TR-12, the new off-street parking supply provided as part of the proposed project would not be expected to accommodate the projected parking demand, and would result in a shortfall in parking spaces that would need to be accommodated in other off-street public parking facilities and on-street or would result in a greater use of transit, bicycle, or pedestrian modes as an alternative to driving.

Other development projects may also contribute to area-wide parking demand. Additionally, through the implementation of the City's Transit-First Policy, the San Francisco Better Streets Plan, Vision Zero projects, and related projects, on-street parking spaces may be further removed to promote sustainable travel modes and sustainable street designs including cycle tracks, bicycle lanes, transit bulbs, and corner bulb-outs. These projects would encourage transit use through the reduction of transit travel time and increase of transit reliability, and would encourage bicycle use through provision of separate bicycle facilities that would offer a higher level of security than bicycle lanes and would be attractive to a wider spectrum of the public.

Under 2040 cumulative conditions, within the study area, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles, or walking) and a relatively dense pattern of urban development, may induce drivers to shift to other modes of travel, or change their overall travel habits. Implementation of the proposed project's TDM Program would further lead to a mode shift from private passenger vehicles to transit or other modes of travel. On February 7, 2017, the San Francisco Board of Supervisors approved an ordinance amending the Planning Code to establish a citywide TDM Program.

Considering the location in proximity to high-quality local and regional transit service with multiple alternative public parking facilities the cumulative increase in parking demand as part of new development and associated parking shortfall would not be considered substantial. Thus, the project in combination with past, present, and reasonably foreseeable development in the area, would result in ***less-than-significant*** cumulative impacts on parking.

4.F NOISE

This section describes the existing noise environment in the project area and identifies the potential for noise and vibration associated with implementation of the proposed project to adversely affect established sensitive land uses or land use activities. The impact analysis evaluates the potential noise and vibration impacts of the proposed project and identifies mitigation measures to avoid or reduce adverse impacts.

No comments pertaining to noise were received in response to the notice of preparation (NOP).

ENVIRONMENTAL SETTING

The following section includes an introduction to the key concepts and terms that are used in the evaluation of noise. The environmental setting of the project area and a description of the existing noise environment are also included below.

FUNDAMENTALS OF ENVIRONMENTAL NOISE AND VIBRATION

TERMINOLOGY

A brief description of the noise and vibration concepts and terminology used in this assessment is provided below.

- **Sound**. A vibratory disturbance transmitted by pressure waves through a medium such as air or water that is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion; rather, they combine logarithmically. For instance, if two identical noise sources each produce noise levels of 50 dBA (see definition immediately following), the combined sound level would be 53 dBA, not 100 dBA.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. The dBA scale is the most widely used for environmental noise assessments.
- **C-Weighted Decibel (dBC).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear at very high noise levels. The C-weighting scale is flat and therefore includes more of the low-frequency sound energy than the A scale.

- **Maximum Sound Levels (L_{max}).** The maximum sound level measured during a given measurement period.
- **Equivalent Sound Level (L_{eq})**. The equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy. The 1-hour A-weighted equivalent sound level (L_{eq} 1h) is the energy average of A-weighted sound levels occurring during a 1-hour period.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with a 10 dB penalty added to sound levels between 10:00 p.m. and 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. L_{dn} and CNEL are typically within 1 dBA of each other and, for all intents and purposes, interchangeable.
- **Vibration Velocity Level (or Vibration Decibel Level, VdB).** The root-mean-square velocity amplitude for measured ground motion expressed in dB.
- **Peak Particle Velocity (PPV).** A measurement of ground vibration, defined as the maximum speed at which a particle in the ground is moving, expressed in inches per second (in/sec).

OVERVIEW OF NOISE AND SOUND

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, an evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. Although the decibel scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum; therefore, noise measurements are weighted more heavily toward frequencies to which humans are sensitive through a process referred to as A-weighting. Table 4.F-1 on the following page summarizes typical A-weighted sound levels for different noise sources.

TABLE 4.F-1. TYPICAL A-WEIGHTED SOUND LEVELS

Common Outdoor Activities	Sound Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 mph at 50 feet		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	70	Vacuum cleaner at 3 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban area, daytime	50	Dishwasher in next room
Quiet urban area, nighttime	40	Theater, large conference room (background)
Quiet suburban area, nighttime		
	30	Library
Quiet rural area, nighttime		Bedroom at night, concert hall (background)
Rustling of leaves	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed: October 6, 2015.

Human sound perception, in general, is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. A doubling of actual sound energy is required to result in a 3 dB (i.e., barely noticeable) increase in noise; in practice, for example, this means that the volume of traffic on a roadway would typically need to double to result in a noticeable increase in noise.[1]

[1] California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed: October 6, 2015.

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a point source, such as a stationary compressor or construction equipment, sound attenuates at a rate of 6 dB per doubling of distance. For a line source, such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance. Atmospheric conditions, including wind, temperature gradients, and humidity, can change how sound propagates over distance and affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface, such as grass, attenuates at a greater rate than sound that travels over a hard surface, such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers, such as buildings and topography, which block the line of sight between a source and receiver also increase the attenuation of sound over distance.

In urban environments, simultaneous noise from multiple sources may occur. Because sound pressure levels in decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. Adding a new noise source to an existing noise source, with both producing noise at the same level, will not double the noise level. If the difference between two noise sources is 10 dBA or more, the higher noise source will dominate, and the resultant noise level will be equal to the noise level of the higher noise source. In general, if the difference between two noise sources is 0 to 1 dBA, the resultant noise level will be 3 dBA higher than the higher noise source, or both sources if the sources are equal. If the difference between two noise sources is 2 to 3 dBA, the resultant noise level will be 2 dBA above the higher noise source. If the difference between two noise sources is 4 to 10 dBA, the resultant noise level will be 1 dBA higher than the higher noise source.

Community noise environments are generally perceived as quiet when the 24-hour average noise level is below 45 dBA, moderate in the 45 to 60 dBA range, and loud above 60 dBA. Very noisy urban residential areas are usually around 70 dBA CNEL. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA CNEL. Incremental increases of 3 to 5 dB to the existing 1-hour L_{eq}, or to the CNEL, are common standards for an adverse community reaction to a noise increase. However, there is evidence that incremental noise increase in this range may not be sufficiently protective in areas where noise-sensitive uses are located and CNEL is already high (i.e., above 60 dBA). In these areas, limiting noise increases to 3 dB or less is recommended.[2] Noise intrusions that cause short-term interior levels to rise above 45 dBA at night can disrupt sleep. According to the World Health Organization (WHO), sleep disturbance 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

[2] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015.

noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria would suggest exterior continuous (ambient) nighttime noise levels should be 45 dBA (Leq) or below, and short-term events should not generate noise in excess of 60 dBA (Lmax). WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability to fall asleep.[3] Exposure to noise levels greater than 85 dBA of 8 hours or longer can cause permanent hearing damage.

OVERVIEW OF GROUND-BORNE VIBRATION

The operation of heavy construction equipment, particularly pile-driving equipment and other impact devices (e.g., pavement breakers), creates seismic waves that radiate along the surface of the ground and downward. These surface waves can be felt as ground vibration. Vibration from the operation of this type of equipment can result in effects that range from annoyance for people to damage for structures.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they cause rock and soil particles to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is referred to as peak particle velocity (PPV), the commonly accepted descriptor of vibration amplitude.

Vibration amplitude attenuates (or decreases) over distance. This attenuation is a complex function of how energy is imparted into the ground as well as the soil or rock conditions through which the vibration is traveling (variations in geology can result in different vibration levels).

The following equation is used to estimate the vibration level at a given distance for typical soil conditions.[4] PPV_{ref} is the reference PPV at 25 feet (Table 4.F-2, on the following page).

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

Table 4.F-2, on the following page, summarizes typical vibration levels generated by construction equipment at a reference distance of 25 feet and other distances, as determined with use of the attenuation equation above.

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[3] World Health Organization, Guidelines for Community Noise, Chapter 3, p. 46, April 1999. Available online at http://www.who.int/docstore/peh/noise/guidelines2.html. Accessed April 4, 2017.

[4] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015.

TABLE 4.F-2. VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 175 Feet
Pile driver (impact)	1.518	0.5367	0.2921	0.1898	0.0820
Pile driver (sonic)	0.734	0.2595	0.1413	0.0918	0.0396
Hoe ram	0.089	0.0315	0.0171	0.0111	0.0048
Large bulldozer	0.089	0.0315	0.0171	0.0111	0.0048
Loaded trucks	0.076	0.0269	0.0146	0.0095	0.0041
Jackhammer	0.035	0.0124	0.0067	0.0044	0.0019
Small bulldozer	0.003	0.0011	0.0006	0.0004	0.0002

Source: Source: Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06.* Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015. Accessed: October 6, 2015.

Tables 4.F-3 and 4.F-4, on the following page, summarize the guidelines developed by the California Department of Transportation (Caltrans) for damage and annoyance from the transient and continuous vibration that is usually associated with construction activity. Impact pile drivers, "pogo stick" compactors (small hand-held soil compactors), crack-and-seat equipment (equipment that breaks and re-seats pavement), excavation equipment, static compaction equipment, tracked vehicles, vehicles on highways, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment are typically associated with continuous vibration. The activities that are typically associated with single-impact (transient) or low-rate, repeated impact vibration include blasting and the use of drop balls or dropped metal plates.[5]

Ground-borne vibration can also be quantified by the root-mean-square (RMS) velocity amplitude, which is useful for assessing human annoyance. The RMS amplitude is expressed in terms of the velocity level in decibel units (VdB). The background vibration velocity level in residential areas is usually around 50 VdB or lower. The vibration velocity level threshold of perception for humans is approximately 65 VdB. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are heavy construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible.

[5] California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed: October 6, 2015.

TABLE 4.F-3. GUIDELINES FOR VIBRATION DAMAGE POTENTIAL

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/ Frequent Intermittent Sources
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

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: California Department of Transportation. 2013. *Transportation and Construction Vibration Guidance Manual, Table 19*. September. Available: http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed: October 6, 2015.

TABLE 4.F-4. GUIDELINES FOR VIBRATION ANNOYANCE POTENTIAL

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/ Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: California Department of Transportation. 2013. *Transportation and Construction Vibration Guidance Manual, Table 19*. September. Table 20. Available: http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed: October 6, 2015

Table 4.F-5, on the following page, summarizes the typical ground-borne vibration velocity levels and the average human response to vibration that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, vibration tolerance increases considerably. The duration of the event has an effect on human response, as does its daily frequency of occurrence. Generally, as the duration and frequency of occurrence increase, the potential for adverse human response increases.

TABLE 4.F-5. TYPICAL LEVELS OF GROUND-BORNE VIBRATION

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Standard for minor cosmetic damage to fragile buildings	100	Blasting from construction project
	95	Bulldozer or heavy-tracked construction equipment
Difficulty in reading computer screen	90	
	85	Upper range of commuter rail
Standard for residential annoyance for occasional events (e.g., commuter rail)	80	Upper range of rapid transit
Standard for residential annoyance for frequent events (e.g., rapid transit)	75	Typical commuter rail Bus or truck over bump
	70	Typical rapid transit
Approximate standard for human perception of vibration; limit for vibration-sensitive equipment	65	Typical bus or truck on public road
	60	
	55	Typical background vibration
	50	

Source: Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015.

Ground-borne noise is a secondary component of ground-borne vibration. When a building structure vibrates, noise is radiated into the interior of the building. Typically, this is a low-frequency sound that can be perceived as a low rumble. The magnitude of the sound depends on the frequency characteristic of the vibration and the manner in which the room surfaces in the building radiate sound. Ground-borne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Ground-borne vibration levels of 65 VdB can result in ground-borne noise levels of up to 40 dBA, which can disturb sleep. Ground-borne vibration levels of 85 VdB can result in ground-borne noise levels of up to 60 dBA, which can be annoying to daytime noise-sensitive land uses, such as schools.[6]

[6] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment.

EXISTING NOISE LEVELS

Ambient noise in urban areas is typically dominated by vehicle traffic on local roadways. The existing ambient noise environment in the project vicinity is characterized by vehicular traffic on Third Street but also Muni buses and light-rail trains, construction activities on adjacent parcels, and events at AT&T Park. Muni vehicles on the KT: K-Ingleside/T-Third Street line pass by the project site on Third Street approximately 266 times per weekday,[7] which results in friction noise (i.e., noise from wheels on rails) and noise from warning horns.

At the project site, construction noise from the heavy-duty vehicles that are currently operating on surrounding parcels is present. Such noise is ongoing because of development in Mission Bay; however, it is assumed that much of the current construction activity that contributes to the existing ambient noise levels will end before future residents of the proposed project begin occupying project residences. For example, construction activities currently occurring at Mission Bay Block 1, adjacent to the project site, are expected to be completed in 2017. Note that construction activities at Mission Bay Blocks 4E, 9, and 9A, however, may occur concurrently with project construction (because construction of Mission Bay Block 4E is expected to be go through 2020, and construction of Mission Bay Blocks 9 and 9A is expected to go through 2022). Construction of these projects would contribute to ambient noise levels in the area for the duration of construction activities.

Noise at AT&T Park is generated by large cheering crowds and loudspeaker usage when baseball games or other large events are occurring (approximately 112–127 times per year, as discussed below). Noise levels from all of these sources were captured in the 24-hour measurements conducted for the project, the results of which are presented below under *Noise Measurement Survey*.

The San Francisco Department of Public Health (DPH) has developed a transportation noise map of the city, based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority Travel Demand Model and the Federal Highway Administration (FHWA) Traffic Noise Model.[8] The DPH map indicates the modeled L_{dn} noise on each street in the city. As shown on the map, the project site experiences L_{dn} noise from transportation sources in the 55 to 59 range in areas that are farthest from Third Street; L_{dn} noise is in the 70 to 74 range near Third Street.[9]

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[7] Transit511.org. 2015. Schedules and *Route Maps – KT Line*. Available: http://transit.511.org/schedules/index.aspx#m1=S&m2=rail&cid=SF. Accessed: November 6, 2015.

[8] San Francisco Department of Public Health. No date. *San Francisco Response to Noise Problems*. Available: https://www.sfdph.org/dph/EH/Noise/noiseresponse.asp. Accessed: March 9, 2016.

[9] San Francisco Department of Public Health. 2008. *Transportation Noise Map 2008*. Available: https://www.sfdph.org/dph/files/EHSdocs/ehsNoise/TransitNoiseMap.pdf. Accessed: March 9, 2016.

NOISE SENSITIVE LAND USES

Noise-sensitive land uses are generally defined as locations where people reside or areas where unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include single- and multi-family residential areas, health care facilities, lodging facilities, and schools. Existing noise-sensitive land uses located within approximately 900 feet of the project site are shown in Table 4.F-6, below. Note that other receptors, such as University of California, San Francisco (UCSF) Medical Center and various schools and day-care facilities, are located in the general vicinity of the project (within approximately 900 to 5,000 feet of the project site) but are not included in this table because they would not be expected to experience negative effects from project-related noise at their locations due to the receptor's distance from project generated noise.

TABLE 4.F-6. NOISE-SENSITIVE LAND USES IN THE PROJECT VICINITY

Land Use	Distance from Project Site	Location
Existing Sensitive Receptors		
1. Residential uses	100 to 250 feet to the west	Mission Bay Block Nos. 1, 2, 3W, 4W, 5, 11, 12E/W
2. Residential uses	650 feet to the west	Mission Bay Block Nos. N3A-1, N3A-2, N3A-3, N4A-1, N4A-2, N4A-3
3. Residential uses	400 feet to the south	Mission Bay Block Nos. 10, 10A.
4. Residential uses	500 feet to the southwest	Mission Bay Block No. 7W
5. Modern Family Education Childcare	600 feet to the west	Mission Bay Block No. 13E
6. University of California, San Francisco (UCSF) Cardiovascular Research Institute	900 feet to the south	Mission Bay Block Nos. 17AB, 17C
7. Residences and onsite day care	400 feet to the northwest	Mission Bay Block No. N2-2
8. Family house	450 feet to the southwest	Mission Bay Block No. 7E
9. Mercy housing/residential condos	600 feet and 880 feet west	Mission Bay Block Nos. 13E/W
Future Sensitive Receptors		
10. Residences and day care facilities associated with the proposed project	onsite	
11. Residences not associated with the proposed project	100 feet to the south and 100 feet to the west	Mission Bay Block Nos. 8, 9, 9A, 3E, 4E, 6E/W, 12W

In addition to the existing noise-sensitive land uses listed in Table 4.F-6, on the previous page, future development in the project area in both the near and long term will result in new noise-sensitive land uses in the project vicinity. Residential development on lots west and southwest of the project site (Mission Bay Block Nos. 8, 9, 9A, 3E, 4E, 6E/W, 12W) could result in residences being located adjacent to the site, at a closest distance of approximately 400 feet from the project site.

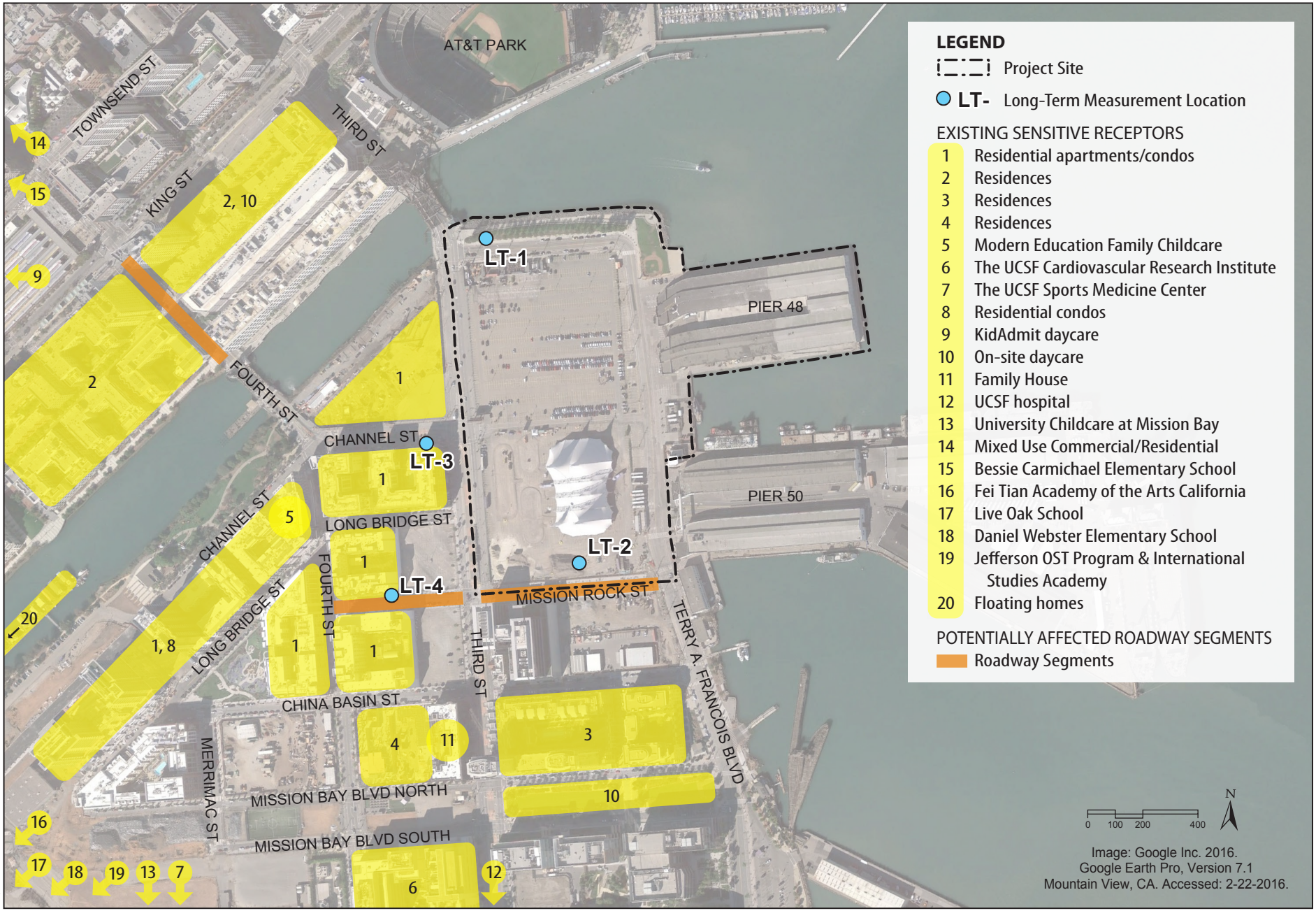
NOISE MEASUREMENT SURVEY

To quantify existing ambient noise levels in the project area, long-term, multi-day ambient noise measurements were conducted between August 27 and September 1, 2015, at locations on and around the project site. Measurement locations were selected to capture 24-hour noise levels in areas that are sensitive to noise throughout the day, such as residences.

The noise measurement sites are shown in Figure 4.F-1 on the following page. Table 4.F-7 (page 4.F-13) summarizes the results of the noise measurement survey. For the complete dataset of measured noise levels, please refer to Appendix 5, Noise Technical Memorandum.

Because of ongoing construction in the immediate vicinity of the project site at the time the noise measurement survey was conducted, the noise levels shown in the table below are most likely elevated relative to normal ambient noise levels when construction is not occurring. Specifically, it should be noted that pile driving at Mission Bay Block 1 was occurring during the noise measurements, resulting in high levels of noise. Because pile driving at this location would be occurring for several months, it was not possible to conduct the noise survey during daytime hours without the inclusion of noise from pile driving. As a result, L_{dn} levels measured do not represent typical daily average noise levels (when pile driving is not occurring). In addition to pile driving on Mission Bay Block 1, traffic noise on roadways surrounding the project site, primarily Third Street, was the main contributor to the ambient noise environment. In addition, noise from the Muni KT line was present throughout the project site during the noise survey.

Because of the proximity of the project site to AT&T Park, and because game-related noise may be audible at future residential outdoor use areas associated with the proposed project, ambient noise levels in the area during baseball games (as opposed to when no games were occurring) were measured to help characterize the existing noise environment.



Graphics ... 00336.13 (3-22-2017)

Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4F-1
Noise Measurement Locations

TABLE 4.F-7. NOISE LEVEL MEASUREMENTS AT SELECTED LOCATIONS ON AND AROUND THE PROJECT SITE

			Measured Noise Levels by Date											
			Fri. 8/28[a]			Sat. 8/29[b]			Sun. 8/30[c]			Mon. 8/31[d]		
Site	Site Description	Primary Noise Sources	24-hour (L_{dn}) Noise (dBA)	L_{max} (dBA)	L_{min} (dBA)	24-hour (L_{dn}) Noise (dBA)	L_{max} (dBA)	L_{min} (dBA)	24-hour (L_{dn}) Noise (dBA)	L_{max} (dBA)	L_{min} (dBA)	24-hour (L_{dn}) Noise (dBA)	L_{max} (dBA)	L_{min} (dBA)
LT-1	China Basin Park	Pile driving and other construction noise Vehicle traffic on Third Street and Terry A. Francois Boulevard Noise during baseball games on Friday, Saturday, and Sunday	76.0	98.6	57.6	78.5	100.4	58.6	74.4	99.6	58.2	74.3	102.4	57.8
LT-2	South Side of Project Site	Pile driving and other construction noise Vehicle traffic on Third Street and Mission Rock Street Vehicles and crowd noise in Parking Lot A Fire engine noise from San Francisco Fire Station No. 4 Light rail noise	65.6	84.1	48.9	63.9	88.9	48.9	64.6	84.3	49.4	66.9	89.7	50.7
LT-3	In front of Mission Bay Block 1 on Channel Street	Pile driving and other construction noise Vehicle traffic on Third Street and Channel Street Light rail noise	79.3	105.8	57	74.2	103.6	56.7	73.0	99.9	57.4	83.4	105.4	55.9
LT-4	In front of the Strata Apartments on Mission Rock Street	Pile driving and other construction noise Vehicle traffic on Third Street and Mission Rock Street	68.6	97.2	47.1	65.7	88.9	46.3	64.0	97.0	46.3	66.9	91.8	47.1

Notes: Noise measurements collected by ICF International. For the complete dataset of measured noise levels, please refer to Appendix 5.

[a] A baseball game occurred on this day at 7:15 p.m., during the 24-hour measurement.

[b] A baseball game occurred on this day at 1:05 p.m., during the 24-hour measurement.

[c] A baseball game occurred on this day at 1:05 p.m., during the 24-hour measurement.

[d] No baseball game occurred during the measurement on this day.

There are 81 regular-season, two to five preseason, and up to 12 postseason baseball games per year at AT&T Park. AT&T Park hosts approximately 145 nonbaseball-related special events per year, including a limited number of concerts (which may generate noise levels similar to or possibly slightly greater than noise from a baseball game), charity and private events (which may generate less noise than a game or concert), and other sporting events. To assess average 24-hour noise levels with the inclusion of noise from baseball games (or other similarly loud events), long-term, multi-day measurements were conducted to be consistent with land use compatibility standards, which are specified in terms of L_{dn}. This approach is considered to be more useful in assessing the contribution of baseball game or event noise than short-term measurements that isolate the maximum, minimum, or average noise levels that occur during a game.

During the measurement period (i.e., August 27 to September 1, 2015), baseball games occurred on the following dates:

- Friday, August 28, 2015, at 7:15 p.m.
- Saturday, August 29, 2015, at 1:05 p.m.
- Sunday, August 30, 2015, at 1:05 p.m.

REGULATORY FRAMEWORK

FEDERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

The Federal Noise Control Act of 1972 addressed the issue of noise and its threat to human health and welfare, particularly in urban areas. In response to the act, the U.S. Environmental Protection Agency (USEPA) published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (USEPA Levels). Table 4.F-8, on the following page, summarizes USEPA recommendations for noise-sensitive areas. Ideally, the yearly average L_{eq} should not exceed 70 dBA to prevent measurable hearing loss over a lifetime, and the L_{dn} should not exceed 55 dBA outdoors and 45 dBA indoors to prevent substantial activity interference and annoyance in noise-sensitive areas. In addition to the identified noise levels to protect public health, the USEPA Levels identify an increase of 5 dBA as an adequate margin of safety relative to a baseline noise exposure level of 55 dBA L_{dn} before a noticeable adverse community reaction would be expected.

TABLE 4.F-8. SUMMARY OF NOISE LEVELS IDENTIFIED BY USEPA AS REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY

Effect	Level	Area
Hearing loss	L_{eq} (24 hr) < 70 dBA[a]	All areas.
Outdoor activity interference and annoyance	L_{dn} < 55 dBA	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	L_{eq} (24 hr) < 55 dBA	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	L_{dn} < 45 dBA	Indoor residential areas.
Indoor activity interference and annoyance	L_{eq} (24 hr) < 45 dBA	Other indoor areas with human activities, such as schools, etc.

Source: U.S. Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Available: http://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF. Accessed: December 3, 2015.

[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. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

The U.S. Department of Housing and Urban Development (HUD) has set guidelines for acceptable noise levels in residential areas. These guidelines are specified in Code of Federal Regulations (CFR) Title 24, Part 51, and are included below.

- **Acceptable**—65 dBA L_{dn} or less
- **Normally unacceptable**—Exceeding 65 dBA L_{dn} but not exceeding 75 dBA L_{dn}
- **Unacceptable**—Exceeding 75 dBA L_{dn}

The HUD guidelines also include a goal (not a standard) for interior noise levels not to exceed 45 dBA L_{dn}.[10] Sound-attenuating features, such as barriers, or sound-attenuating building materials shall be used to achieve the interior noise goal where feasible. Standard building construction generally provides 20 dB of sound attenuation; therefore, if the exterior noise

[10] 24 CFR, Section 51.103(c).

environment is classified as "acceptable" (e.g., 65 dBA L_{dn} or less), according to HUD guidelines, the interior noise environment should not exceed 45 dBA L_{dn}. The HUD guidelines also encourage the use of quieter construction equipment and methods.[11]

FEDERAL TRANSIT ADMINISTRATION

The Federal Transit Administration (FTA) guidance document *Transit Noise and Vibration Impact Assessment* (FTA 2006) provides guidelines for analyzing construction noise impacts. Table 4.F-9, below, summarizes the general assessment criteria for construction noise recommended by FTA. The City and County of San Francisco (City) uses these criteria, in part, to assess the significance of construction noise from impact equipment (pile drivers) that is conditionally exempt from the San Francisco Noise Ordinance (Noise Ordinance) (see discussion below under *Local*).

FTA recommends the guidelines specified in Table 4.F-9, below, for the assessment of construction noise. Note that the FTA guidelines for construction noise were developed in the context of transportation projects. However, it is reasonable to use these guidelines for the proposed mixed-use project because the guidelines address noise resulting from construction equipment, regardless of the project context. If the combined noise level in one hour from the two noisiest pieces of equipment exceeds these criteria, there may be an adverse community reaction.

TABLE 4.F-9. FTA GENERAL ASSESSMENT CRITERIA FOR CONSTRUCTION NOISE

	One-hour L_{eq} (dBA)	
Land Use	**Day**	**Night**
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: FTA 2006.

FTA also developed a methodology and general assessment criteria for evaluating vibration impacts from construction activity in its *Transit Noise Impact and Vibration Assessment*.[12] The FTA-promulgated criteria for assessing vibration effects produced by construction activity are shown in Table 4.F-10 on the following page.

[11] 24 CFR, Section 51.101(7).

[12] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015.

TABLE 4.F-10. FTA GENERAL ASSESSMENT CRITERIA FOR GROUND-BORNE VIBRATION IMPACT CRITERIA

Land Use Category	Impact Levels (VdB; relative to 1 micro-inch/second)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015.

a. "Frequent events" is defined as more than 70 vibration events from the same source per day.

b. "Occasional events" is defined as 30 to 70 vibration events from the same source per day.

c. "Infrequent events" is defined as fewer than 30 vibration events from the same source per day.

d. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define the acceptable vibration levels.

STATE

TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS, NOISE INSULATION STANDARDS

California Code of Regulations (CCR) Title 24, Part 2, Sound Transmission, establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under this regulation, interior noise levels attributable to exterior noise sources cannot exceed 45 dB in any habitable room. The noise metric is either the L_{dn} or the CNEL, consistent with the noise element of the local general plan.

LOCAL

NOISE ORDINANCE

The Noise Ordinance (Article 29, San Francisco Police Code, Section 2900) specifically recognizes that adverse community effects, including physiological and psychological stress, sleep disturbance, and depression, can arise from persistent exposure to elevated levels of typical urban noise, including noise associated with transportation, construction activity, mechanical equipment, entertainment, and human and animal behavior. The Noise Ordinance regulates specific sources of noise and makes the following declaration:

> 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.

The regulatory provisions below are included to address and limit disruptive noise intrusions.

Construction (Sections 2907 and 2908). The Noise Ordinance limits noise from powered construction equipment to a level of 80 dBA at a distance of 100 feet (or an equivalent level at some other distance). This limit does not apply to construction equipment used in connection with emergency work or impact tools and equipment (e.g., jackhammers, hoe rammers, impact wrenches), provided they have intake and exhaust mufflers, or pavement breakers or jackhammers that have been equipped with acoustically attenuating shields or shrouds. All such noise control features shall be recommended by the manufacturers and approved by the Director of Public Works or the Director of Building Inspection for attenuating noise. Also, construction activities are generally prohibited between the hours of 8:00 p.m. and 7:00 a.m. if the noise created would exceed the ambient noise level by 5 dBA at the nearest property line, unless a special permit is authorized by the Director of Public Works or the Director of Building Inspection.

Noise Limits (Section 2909). This section of the Noise Ordinance regulates noise from mechanical equipment and other similar sources. The Noise Ordinance (Section 2909(a) and (b)) limits noise from sources, which are defined as "any machine or device, music, or entertainment or any combination of same," located on residential or commercial/industrial property to 5 dBA or 8 dBA, respectively, above the local "ambient"[13] noise level at any point outside of the property line of a residential or commercial/industrial property. The Noise Ordinance also limits noise from sources located on public property[14] to 10 dBA above the local ambient noise level at a distance of 25 feet or more, unless the machine or device is being operated to serve or maintain the property. An additional low-frequency criterion applies to noise generated from a licensed "place of entertainment" (i.e., associated noise or music shall not exceed the low-frequency ambient noise level[15] by more than 8 C-weighted decibels [dBC]).[16]

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[13] Noise Ordinance Section 2901(a) states that "ambient" is the lowest sound level repeating itself during a minimum 10-minute period, as measured with a Type 1 precision sound-level meter, set on "slow" response and A-weighting. In no case shall ambient be considered or determined to be (1) less than 35 dBA for interior residential noise and (2) 45 dBA in all other locations.

[14] Noise Ordinance Section 2901(l) defines "public property" as property leased or owned by a government entity to which the public or a substantial group of persons has access, including, but not limited to, any street, highway, parking lot, plaza, transportation facility, school, place of amusement, park, or playground.

[15] Noise Ordinance Section 2901(f) defines "low-frequency ambient" as the lowest sound level repeating itself during a 10-minute period, as measured with a sound level meter using slow response and C-weighting. The minimum sound level shall be determined with the music or entertainment noise source at issue silent. However, in no case shall the local ambient be considered or determined to be less than (1) 45 dBC for interior residential noise or (2) 55 dBC in all other locations.

[16] C-weighted decibel (dBC) refers to an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear at very high noise levels. The C-weighting scale is flat and therefore includes more of the low-frequency sound energy than the A scale.

Section 2909(d) of the Noise Ordinance limits noise, as measured from inside any sleeping or living room in any dwelling unit located on residential property, from a "fixed source"[17] to 45 dBA between the hours of 10:00 p.m. and 7:00 a.m. or 55 dBA between the hours of 7:00 a.m. and 10:00 p.m. with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

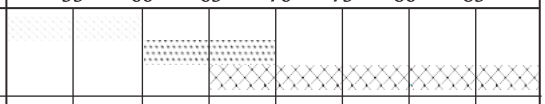
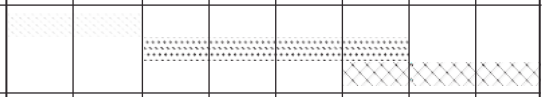
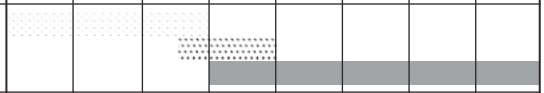
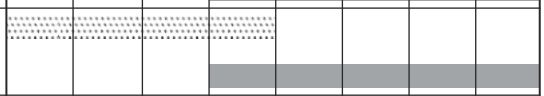
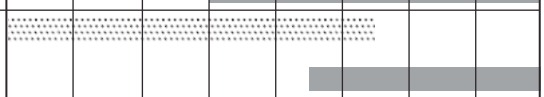
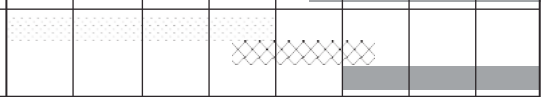
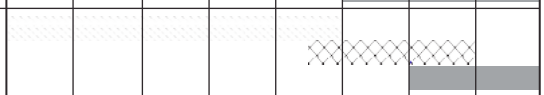
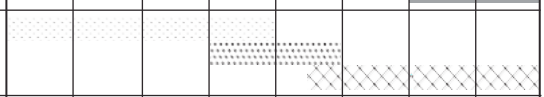
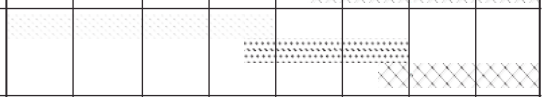
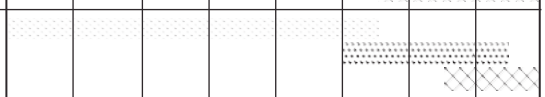
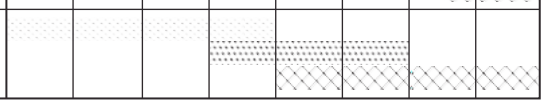
GENERAL PLAN

The San Francisco General Plan (General Plan) contains policies for avoiding or mitigating transportation noise and includes guidelines for determining the compatibility of land uses with noise levels. According to these guidelines, the maximum "satisfactory, with no special insulation requirements" exterior noise level for residential land uses (including transient lodging such as hotels) is approximately 60 dBA L_{dn}. For office and most commercial land uses, the maximum "satisfactory, with no special insulation requirement," noise level is 70 dBA L_{dn}. If such uses are to be located in areas where noise levels exceed these guidelines, a detailed analysis of noise reduction requirements should be done, with noise insulation features included in the design. The General Plan guidelines are shown in full in Table 4.F-11 on the following page. The following General Plan Environmental Protection Element objectives and policies pertain to reducing noise impacts on land uses.

- Policy 9.2: Impose traffic restrictions to reduce transportation noise. Transportation noise levels vary according to the predominance of vehicle type, traffic volume, and traffic speed. Curtailing any of these variables ordinarily produces a drop in noise level. In addition to setting the speed limit, the City has the authority to restrict traffic on city streets, and it has done so on a number of streets. In addition, certain movement restraints can be applied to slow down traffic or divert it to other streets. These measures should be employed where appropriate to reduce noise.
- Policy 9.6: Discourage changes in streets which will result in greater traffic noise in noise-sensitive areas. Widening streets for additional traffic lanes or converting streets to one-way direction can induce higher traffic volume and faster speeds. Other techniques such as tow-away lanes and traffic light synchronization also facilitate heavier traffic flows. Such changes should not be undertaken on residential streets if they will produce an excessive rise in the noise level of those streets.

[17] Noise Ordinance Section 2901(e) states that a "fixed source" is a machine or device that is capable of creating a noise level at the property upon which it is regularly located, including, but not limited to, industrial and commercial machinery and equipment, pumps, fans, air-conditioning apparatus, or refrigeration machines.

TABLE 4.F-11. SAN FRANCISCO GENERAL PLAN LAND USE COMPATIBILITY GUIDELINES

LAND USE CATEGORY	Sound Levels and Land Use Consequences (see explanation below) L_{dn} Value in Decibels 55 60 65 70 75 80 85
RESIDENTIAL All Dwellings, Group Quarters	
TRANSIENT LODGING Hotels, Motels	
SCHOOL CLASSROOMS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES, ETC.	
AUDITORIUMS, CONCERT HALLS, AMPHITHEATERS, MUSIC SHELLS	
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS	
PLAYGROUNDS, PARKS	
GOLF COURSES, RIDING STABLES, WATER-BASED RECREATION AREAS, CEMETERIES	
OFFICE BUILDINGS Personal, Business, and Professional Services	
COMMERCIAL Retail, Movie Theatres, Restaurants	
COMMERCIAL Wholesale and Some Retail, Industrial/ Manufacturing, Transportation, Communications and Utilities	
MANUFACTURING Noise-Sensitive **COMMUNICATIONS** Noise-Sensitive	

Notes:

Satisfactory, with no special noise insulation requirements.

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

New construction or development should generally not be undertaken.

Source: City and County of San Francisco. 2004. *San Francisco General Plan*. Environmental Protection Element. Available: http://www.sf-planning.org/ftp/general_plan/I6_Environmental_Protection.htm. Accessed: December 3, 2015.

- Objective 10: Minimize the impact of noise on affected areas. The process of blocking excessive noise from our ears could involve extensive capital investment if undertaken on a systematic, citywide scale. Selective efforts, however, especially for new construction, are both desirable and justified.
- Policy 10.1: Promote site planning, building orientation and design, and interior layout that will lessen noise intrusion. Because sound levels drop as distance from the source increases, building setbacks can play an important role in reducing noise for the building occupants. (Of course, if provision of the setback eliminates livable rear yard space, the value of the setback must be weighed against the loss of the rear yard.) Buildings sited with their narrower dimensions facing the noise source and sited to shield or be shielded by other buildings also help reduce noise intrusion. Although walls with no windows or small windows cut down on noise from exterior sources, in most cases it would not be feasible or desirable to eliminate wall openings. However, interior layout can achieve similar results by locating rooms whose use require more quiet, such as bedrooms, away from the street noise. In its role of reviewing project plans and informally offering professional advice on site development, the Department of City Planning can suggest ways to help protect the occupants from outside noise, consistent with the nature of the project and size and shape of the building site.
- Policy 10.2: Promote the incorporation of noise insulation materials in new construction. State-imposed noise insulation standards apply to all new residential structures except detached single-family dwellings. Protection against exterior noise and noise within a building is also important in many nonresidential structures. Builders should be encouraged to take into account prevailing noise levels and to include noise insulation materials as needed to provide adequate insulation.
- Policy 10.3: Construct physical barriers to reduce noise transmission from heavy traffic carriers. If designed properly, physical barriers such as walls and berms along transportation routes can in some instances effectively cut down on the noise that reaches the areas beyond. There are opportunities for a certain amount of barrier construction, especially along limited access thoroughfares and transit rights-of-way (such as BART), but it is unlikely that such barriers can be erected along existing arterial streets in the city. Barriers are least effective for those hillside areas above the noise source. Where feasible, appropriate noise barriers should be constructed.
- Objective 11: Promote land uses that are compatible with various transportation noise levels. Because transportation noise is going to remain a problem for many years to come, attention must be given to the activities close to the noise. In general, the most noise-sensitive activities or land uses should ideally be the farthest removed from the noisy transportation facilities. Conversely, those activities that are not seriously affected by high outside noise levels can be located near these facilities.

MISSION BAY GOOD NEIGHBOR POLICY

The Mission Bay Good Neighbor Policy, which relates to construction noise in the Mission Bay area, applies to all Mission Bay development but does not apply outside of the Mission Bay area and, therefore, is not directly applicable to the proposed project. This policy specifies that:

> Pile driving or other extreme noise-generating activity (80 dBA at a distance of 100 feet) shall be limited to 8:00 a.m. to 5:00 p.m. Monday through Friday. No pile driving or other extreme noise-generating activity is permitted on Saturday, Sundays, or holidays. Requests for pile driving on Saturdays may be considered on a case-by-case basis by the Office of Community Investment and Infrastructure, with approval at the sole discretion of the executive director.

PORT OF SAN FRANCISCO GOOD NEIGHBOR STANDARDS

The Port Commission for the Port of San Francisco (Port) has adopted the following "good neighbor" standards for activities, including special events, that occur on the waterfront. Sponsors of events in this area will be required to meet these standards for bars, restaurants that sell alcohol, large fast-food restaurants, and assembly and entertainment uses (including special events), unless the Port Commission makes a specific finding that a particular condition is unnecessary or infeasible. Standards relevant to the project are as follows:

a. Any indoor and/or outdoor activity located within 300 feet of a residential unit shall, during the period from 10:00 p.m. to 6:00 a.m., ensure that sound levels emanating from such activities do not exceed the acceptable noise levels established by the San Francisco Noise Ordinance (Police Code, Article 29).

b. The tenant (or sponsor) shall post interior signs and request that patrons leaving the premises after 10:00 p.m. leave the establishment and the neighborhood in a quiet, peaceful, and orderly fashion and not litter or block driveways in the neighborhood. The tenant shall alert the San Francisco Police Department if exiting patrons are causing a disturbance.

e. The tenant (or sponsor) shall designate a neighborhood liaison contact person whose name and phone number shall be made available to the Port and neighborhood associations in the area.[18]

[18] Port of San Francisco. 2017. *Guidelines & Application for Special Events*, pp. 7 and 8. March 2. Available: http://sfport.com/sites/default/files/Real%20Estate/Docs/Special%20Events/Guidelines%20for%20Special%20Events%20%2803-02-2017%29.pdf.

ENVIRONMENTAL IMPACTS

This section provides the impact analysis related to noise for the proposed project. It describes the methods used to determine the impacts of the proposed project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The project would have a significant effect if it would result in any of the conditions listed below.

- Result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.
- Result in the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- Be substantially affected by existing noise levels.
- For a project located within 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.
- For a project located in the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

METHODS FOR ANALYSIS

In *California Building Industry Association v. Bay Area Air Quality Management District*, decided in 2015,[19] 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 when the project would significantly exacerbate an existing environmental condition. Accordingly, the significance criteria above related to exposure of persons to noise levels in excess of standards in the General Plan or Noise Ordinance, exposure of persons to excessive

[19] *California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal.4th 369. Opinion filed December 17, 2015.

ground-borne vibration or ground-borne noise levels, and people being substantially affected by existing noise levels are relevant only to the extent that the project would significantly exacerbate the existing noise environment. Thus, the analysis below evaluates whether the proposed project could significantly exacerbate the existing or future noise environment. An impact is considered significant if implementation of the proposed project would significantly exacerbate existing or future noise levels.

CONSTRUCTION

The City Noise Ordinance restricts increases in ambient noise levels to 5 dBA at the nearest property line between 8:00 p.m. and 7:00 a.m.; however, because there are no plans for nighttime construction as part of the proposed project, the project would be in compliance with this component of the Noise Ordinance. Noise levels associated with project-related construction activities were evaluated by assessing the noise-generation potential for each individual piece of equipment proposed for use on the site, and by summing the noise levels of the two loudest pieces of equipment, as discussed further below.

Per the City Noise Ordinance, noise from individual pieces of equipment was compared to the City's limit on construction equipment noise of 80 dBA at 100 feet. This equates to approximately 86 dBA at 50 feet. Per the FTA guidelines for impact equipment and combined equipment noise, modeled combined construction noise levels were compared to the FTA general assessment construction noise criterion of 90 dBA for the daytime 1-hour L_{eq} at residential receptor locations. These criteria are used to address whether the project would cause noise to increase in excess of standards established in the noise ordinance or applicable standards of other agencies. This is addressed under Impact NOI-1.

Also per the FTA guidelines, modeled combined construction noise levels were compared to the ambient noise levels in the area in order to determine if a 10 dBA above-ambient increase occurred. This criterion is used to address whether the project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This is also addressed under Impact NOI-1.

Note that because construction noise is inherently variable, qualitative factors (e.g., duration and frequency of the noise, proximity to sensitive receptors) are also taken into consideration in the construction analysis for the proposed project, as applicable. Therefore, the criteria listed above are not strictly thresholds to be used for CEQA purposes, but rather quantitative information that is considered in combination with other qualitative factors to determine the significance of project generated noise.

The construction noise scenario modeled for this analysis assumes that the two loudest pieces of equipment would operate simultaneously. This is a reasonable worst-case scenario for maximum construction noise because it is unlikely that more than the two pieces of equipment would operate at the same time at the same location. A list of the construction equipment that is expected

to be used was provided by the project sponsor. Noise reference levels in FHWA's *Road Construction Noise Model User's Guide* were used to assess noise from equipment.[20] The sum of equipment noise from the two loudest pieces of equipment was then compared to the FTA Guidelines (the general assessment construction noise criterion of 90 dBA L_{eq}), as described above.

To determine if the project would result in a substantial temporary increase in noise related to construction, the ambient noise levels at the nearest sensitive receptor was compared to the combined construction noise level from the two loudest pieces of equipment at that receptor. For this project, the lowest 1-hour daytime L_{eq} from long-term noise measurement days can be conservatively used as an ambient noise level for this area as a point of comparison for modeled project-related construction noise. The temporary increase is considered substantial if the increase is greater than 10 dBA above the ambient noise level, which represents a perceived doubling of noise, as described above.

As discussed in Chapter 2, *Project Description*, seismic upgrades to Pier 48 would involve the replacement of piles, which would involve in-water pile driving. The scope of the seismic upgrade consists of approximately 106 new piles located below a new heavily reinforced concrete apron. This may result in in-water noise, which is discussed in detail in Section 4.L, *Biological Resources*, and airborne noise. Airborne noise associated with this in-water pile driving is assessed using the same methodology as the noise generated by pile driving on land, which, in the case of pile driving at Pier 48, takes into account that it would occur farther away from nearby noise-sensitive land uses than would pile driving on land, and shielding effects from the pier may further reduce noise effects from this activity in some instances, depending on where the pile driving is proposed to occur in relationship to nearby receptors at a given time Airborne noise from pile driving, including in-water pile-driving, is discussed later in this section. Vibration from construction equipment is assessed by using the source levels and criteria in Tables 4.F-2, 4.F-3, and 4.F-4, pages 4.F-6, 4.F-7, and 4.F-7. The damage threshold used to assess potential damage to buildings varies by building type, as shown in Table 4.F-3., page 4.F-7. The annoyance threshold used to assess potential annoyance-related vibration effects for this analysis is 0.10 in/sec PPV (the "strongly perceptible" level for continuous or frequent intermittent sources). Because pile driving would occur over an extended period of time, a "strongly perceptible" level of vibration is considered to be a reasonable threshold for assessing the significance of vibration relative to annoyance.

OPERATION

Noise-level measurements were taken at representative locations in the vicinity of the project area where new land uses would be located and where noise-sensitive land uses are currently located (see Table 4.F-7, page 4.F-13, and Figure 4.F-1, page 4.F-12). Noise measurements were

[20] Federal Highway Administration. 2006. *Roadway Construction Noise Model User's Guide*. Available: http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf. January. Washington, DC.

conducted to document the baseline ambient noise levels that existing noise-sensitive land uses currently experience from a variety of noise sources in the area. Traffic noise in the project vicinity was modeled by using intersection turning-movement data provided by the traffic engineer. This includes the modeling of existing traffic noise levels for relevant roadway segments, based on data from the traffic engineer, which serve as the baseline for comparison to future roadway segment traffic noise levels. The data were converted into average daily traffic (ADT) volumes for the 148 segments in the general vicinity of the project. Note that traffic noise increases with increasing traffic volumes, but a 10 percent increase in traffic equates to less than a 1 dB (approximately 0.4 percent) increase in noise. As discussed above under Overview of Noise and Sound, a less than 1 dB increase in noise is barely noticeable and is not considered to be a substantial increase in noise. Roadway segments that would experience less than a 10 percent increase in traffic are, therefore, not included in the analysis. All roadway segments where project-generated traffic would increase total roadway volumes by 10 percent or more (40 roadway segments out of 148 studied) were considered in the analysis.

To provide the most conservative approach to the analysis, an assessment of traffic volumes was conducted to determine which scenario would result in the greatest noise impact: a.m. peak-hour, p.m. peak-hour nongame-day, or p.m. peak-hour game-day traffic volumes. Nongame event traffic was not separately analyzed in Section 4.E, *Transportation*, and is therefore not separately analyzed from a noise perspective. Although none of the three scenarios was determined to have consistently higher traffic volumes on all segments, p.m. traffic levels on both game days and nongame days were generally higher than a.m. levels.[21] Further, in order to characterize the project's effect on traffic noise levels in the vicinity of the project site, it was determined that p.m. nongame-day traffic (rather than game-day traffic) should be assessed.

Note that some segments had higher traffic volumes and some had lower traffic volumes on game days than on nongame days; therefore, an absolute worst case was not apparent. However, there are approximately 83 to 98 game days per year (and thus 267 to 282 nongame days). Therefore, nongame days would be more representative of typical traffic conditions at the project site, based on the traffic scenarios analyzed in Section 4.E, *Transportation*, and nongame-day traffic would provide an accurate representation of the project's incremental increase to normal existing traffic noise (i.e., traffic noise levels that would occur on approximately 73 to 77 percent of days annually, based on 267 to 282 nongame days per year). Therefore, traffic noise modeling was based on p.m. nongame-day traffic volumes and conducted using the FHWA Traffic Noise Model.

[21] The p.m. traffic levels are generally higher on nongame days. On game days, traffic volumes for the a.m. condition were not collected. Detailed traffic volume data are available in the Transportation Impact Analysis in Appendix 4-1.

In general, traffic noise increases of 3 dBA are barely perceptible to people, while a 5 dBA increase is clearly noticeable.[22] The following thresholds are applied to determine the significance of project-related traffic noise increases: (1) An increase of more than 5 dBA is considered a significant traffic noise increase, and (2) 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 (Table 4.F-11, page 4.F-20), any noise increase greater than 3 dBA is considered a significant traffic noise increase. A 5 dBA increase over ambient noise levels in any noise environment would be considered a substantial permanent increase in the ambient noise levels in the project vicinity because it would be clearly noticeable. A 3 dBA increase over ambient noise levels where the existing or resulting noise environment is "conditionally acceptable," "conditionally unacceptable," or "unacceptable" would be considered a substantial permanent increase in the ambient noise levels in the project vicinity because, although barely perceptible, it would add to an existing or resulting noise level that exceeds satisfactory standards for the applicable land use per the Land Use Compatibility Chart.

Noise from stationary sources includes noise generated by residential activity and commercial and other nonresidential uses. This would include primarily noise generated by heating, ventilation, and air-conditioning (HVAC) equipment and loading zone operations (e.g., truck delivery noise). Specific information regarding the HVAC equipment that would be used on the project site is not available. Therefore, information pertaining to typical HVAC equipment[23] has been used to evaluate potential impacts. Operation of HVAC equipment, other mechanical equipment, and delivery trucks at onsite loading docks at the proposed project buildings would be subject to Sections 2909(a) and (b) of the Noise Ordinance, which limit noise produced on residential and commercial properties to no more than 5 and 8 dBA, respectively, above the ambient noise levels at any point outside the property plane. Further, stationary operational noise (from mechanical equipment and delivery trucks) is limited by Section 2909(d) of the Noise Ordinance, which provides that residential interior noise cannot exceed 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). Noise from loading zone operations was evaluated using data from a typical loading dock.[24]

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[22] California Department of Transportation. 2009. *Technical Noise Supplement*, pp. 2-48 and 2-49. Division of Environmental Analysis. November. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed: January 31, 2017.

[23] Hoover and Keith. 2000. *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*. Houston, TX.

[24] Recon Environmental. 2015. *Noise Report, Lilac Hills Ranch*. Specific Plan, General Plan Amendment Rezone EIR. San Diego County, California. June 1.

LAND USE ASSUMPTIONS

As described in Chapter 2, *Project Description*, this environmental impact report (EIR) analyzes two land use assumptions: the High Commercial Assumption and the High Residential Assumption. These assumptions represent the two development programs that could be implemented under the flexible zoning proposed for Blocks H, I, and J. Construction noise and vibration is anticipated to be similar for both assumptions because they would involve the same types of construction activities and the same durations, equipment, and staging and construction locations. Accordingly, the construction noise and vibration impacts would be the same for both the High Commercial and High Residential Assumptions. Similarly, the impacts from light-rail noise and vibration, as well as noise from baseball games, on onsite land uses and the impacts from building noise on onsite and offsite land uses would be the same for both assumptions; thus, no distinctions are made between the two land use assumptions in the analysis of these impacts.

Because the land use mix between the High Commercial and High Residential Assumptions differs, the operational segment-by-segment traffic volumes vary slightly between the two assumptions. The differences, however, are small. With respect to traffic volumes under the High Commercial and High Residential Assumptions, no segment varies by more than 50 vehicles per hour, and most vary by a much smaller amount. The small differences between traffic volumes under the two assumptions would not result in any meaningful difference in traffic noise levels. As such, because the High Commercial Assumption was chosen for analysis in this section, only the High Commercial Assumption was modeled for traffic noise; however, the modeling results apply to both the High Commercial and High Residential Assumptions. The traffic volumes upon which this analysis is based are presented in the Transportation Impact Analysis (Appendix 4-1).

IMPACTS NOT EVALUATED IN DETAIL

The closest airports to the project site are Oakland International Airport and San Francisco International Airport, located approximately 9 and 10 miles away, respectively. The project site is not within the Airport Land Use Plan of either airport, and as indicated, it is more than two miles from the airports. There are no private airstrips in the vicinity of the project site. Therefore, occupants at the project site would not be exposed to excessive noise from any public airport or private airstrip activities. Impacts pertaining to public airports and private airstrips are not evaluated further.

PRIMARY EXISTING NOISE SOURCES

The following are noise sources that exist near the project site and vicinity and are part of the existing baseline noise environment. The project would not increase noise levels from these sources.

BASEBALL GAME NOISE AND NOISE FROM OTHER LARGE EVENTS AT AT&T PARK

During baseball season, games at AT&T Park result in several distinct types of noises, which are audible at the project site. These include crowd noise from cheering fans, music and commentary over the PA system, and parking lot and tailgating activities in the parking areas. As noted above, there are approximately 83 to 98 baseball games per year as well as a limited number of concerts (which are also noise-generating), charity and private events (which may generate less noise than a game or concert), and other sporting events. In total, there are approximately 145 nonbaseball-related special events per year, though only a few (about 20 percent of the number of game events) would generate noise levels similar to (or possibly slightly greater than [e.g., a rock concert]) noise levels generated during a baseball game. These events typically do not generate more noise than a baseball game and are considered similar to a baseball game for the purposes of this discussion.

When the project is operational, crowd noise and PA system noise from baseball games as well as noise from large noise-generating events would still be audible at the project site; however, with parking on Seawall Lot 337 removed, parking lot and tailgate activity noise would most likely be reduced because an interior parking structure would generally not be as conducive to tailgate activity and other surface lot noise. Parking lot and tailgate activity noise (should it occur) would largely be confined to the indoor parking structure.

As shown in Table 4.F-7 (page 4.F-13), 24-hour noise levels on baseball game days on the side of the project site closest to AT&T Park (LT-1) range from 74.4 to 78.5 dBA L_{dn}. Game-day noise would most likely be best represented by noise at noise monitoring site LT-1 on August 30, 2015 (74.4 dBA L_{dn}). This is, in part, because pile driving occurred on August 28, 2015, and noise levels on August 29, 2015 increased because of noise from an outdoor event at The Yard at Mission Rock, a temporary gathering space constructed of freight shipping containers that includes retail, bar, and restaurant uses. Thus, August 30 is considered to be the most representative measurement for a typical game day.

Given existing noise levels at the project site on game days, project residential and commercial land uses would experience noise levels during baseball games and other large events at AT&T Park that could be inconsistent with the City's General Plan land use compatibility standards. As shown in Table 4.F-11 (page 4.F-20), new construction is discouraged where noise levels are between 70 and 80 dBA L_{dn}, unless a detailed analysis of the noise reduction requirements and the needed noise insulation features is included in the design. However, new construction would be required to comply with CCR Title 24, which would ensure that interior noise levels at the new buildings would meet the 45 dBA L_{dn} standard at the time a building permit is issued. Development of the project would not result in an increase in the existing ambient noise environment from events at AT&T Park.

EXISTING LIGHT-RAIL NOISE EFFECTS ON ONSITE RECEPTORS

Proposed residential and commercial uses would be located in proximity to Third Street, Channel Street, Mission Rock Street,[25] and new internal project site roadways. Onsite land uses developed as a part of project implementation would be exposed to existing light-rail noise. The project would not result in an increase in Muni service or associated light-rail noise.

Proposed residential land uses could be exposed to light-rail noise; specifically, residential uses located in parcel D1 would be located as close as 50 feet away from Muni light-rail tracks on Third Street. Existing noise levels at this location are currently dominated by construction in the project vicinity and measured to be in the range of 73 to 83 dBA L_{dn}, as indicated by the data for noise monitoring site LT-3 in Table 4.F-7 (page 4.F-13).

Average noise levels in areas with large volumes of vehicle traffic and intermittent light-rail trips are frequently dominated by semi-continuous street traffic noise.[26] Because there is generally a high level of vehicle traffic in the project area, noise from intermittent streetcar operations would most likely not have a substantial effect on L_{dn} noise levels or noise-sensitive receptors associated with project development. Development of the project would not result in an increase in light-rail noise.

EXISTING LIGHT-RAIL VIBRATION EFFECTS ON ONSITE RECEPTORS

The Muni light-rail track is located immediately west of the southern half of the project site, in the center of Third Street. The current design for the project indicates that residential land uses would be located approximately 50 feet from the centerline of the existing light rail on Third Street. There are currently 138 outbound (southward) and 128 inbound (northward) weekday light-rail train passages per day on the track, for a total of 266 passages per weekday.[27]

Vibration impacts from the light-rail line on Third Street were assessed in the 1998 Mission Bay Subsequent EIR, which analyzed impacts from the Muni T line on multi-unit residential buildings within 50 feet of the light-rail track. That analysis concluded that, although vibration from the light rail could disturb occupants in small, wood-frame residential buildings, buildings with pile-supported foundations would attenuate vibration. The distance at which vibration impacts from light-rail operations would be significant for buildings on piles or spread-footing foundations was determined to be 25 feet. Similarly, the Mission Bay Subsequent EIR determined that vibration levels at distances as close as 50 feet from commercial buildings

[25] City and County of San Francisco. 1998. *Mission Bay Subsequent Environmental Impact Report.* Available: https://archive.org/details/missionbaysubse1719sanf_0.

[26] URS Corporation. 2009. Noise and Vibration Settings Report for the San Francisco Muni Historic Streetcar Service to Fort Mason. April.

[27] Transit511.org. 2015. Schedules and *Route Maps – KT Line*. Available: http://transit.511.org/schedules/index.aspx#m1=S&m2=rail&cid=SF. Accessed: November 6, 2015.

would not exceed FTA's impact criteria for commercial land uses.[28] The closest portion of the project development would be located approximately 50 feet from the light-rail track, and the large multi-unit residential and commercial buildings would have foundations that would attenuate vibration impacts from the light rail. These conclusions are consistent with a more general approach, based on the FTA's *Transit Noise and Vibration Impact Assessment*, which can be applied to the project conditions.[29]

An approximate RMS velocity level can be determined by using the Generalized Ground Surface Vibration Curve in Figure 10-1 of the *Transit Noise and Vibration Impact Assessment*. The RMS velocity for a light-rail vehicle traveling 50 miles per hour (mph) at a distance of 50 feet from the track centerline would be approximately 73 VdB. Because the project site is located in an urban area, 30 mph is a more reasonable speed. An adjustment of -4.4 dB, which corresponds to a speed of 30 mph, can be applied to this value.[30] With the speed adjustment, the RMS velocity would be approximately 69 VdB at a distance of 50 feet from the track centerline (73 VdB - 4.4 VdB = 68.6 VdB). This level of ground-borne vibration would be below the impact levels specified by the FTA for frequent events (i.e., more than 70 vibration events from the same source per day) at residential buildings where people normally sleep (72 VdB) and other buildings with primarily daytime uses (75 VdB). Refer to Table 4.F-10 (page 4.F-17) for more details.

Because new land uses at the project site would be located at least 50 feet from the track centerline and would not include small, wood-frame buildings, light-rail vibration would not expose people to excessive ground-borne vibration, according to FTA guidelines. Development of the project would not result in an increase in Muni service or associated light-rail noise or vibration.

IMPACTS AND MITIGATION MEASURES

Impact NOI-1. Construction of the proposed project would generate noise levels in excess of standards or result in substantial temporary increases in ambient noise levels. (Significant and Unavoidable with Mitigation)

CONSTRUCTION NOISE IMPACTS ON EXISTING LAND USES

Construction of the project is expected to occur on four separate areas of the project site, with construction schedules in each area partially overlapping (see Figure 2-16 in Chapter 2, *Project Description*). The duration of construction, starting in spring 2017, is expected to be as short as 6

[28] City and County of San Francisco. 1998. *Mission Bay Subsequent Environmental Impact Report.* Available: https://archive.org/details/missionbaysubse1719sanf_0.

[29] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: December 21, 2015.

[30] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. Table 10-1. Available: http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf. Accessed: December 21, 2015.

or as long as 10 (or more) years. In general, the greatest construction noise impacts would occur during the site preparation and grading, infrastructure, and foundation and building phases because these phases would involve the loudest construction equipment and most intense activity. These phases would occur throughout much of the construction period because construction would be staggered across four areas (each area would have a site preparation and grading phase, an infrastructure phase, etc.). Interior building improvements, which would involve either no heavy-duty construction equipment or a few large pieces, would occur at the middle and end of the construction period for vertical improvements in each area. Once the building façades are in place, noise from interior building work would generally be contained within building envelopes and would not be expected to be excessive. Construction noise levels would fluctuate, depending on the construction phase, equipment type, duration of use, distance between noise source and listener, and the presence or absence of barriers. Construction-related material haul trips would raise ambient noise levels along truck routes, depending on the number of haul trips made and the types of vehicles used. It is estimated that there could be up to 143 haul trips on a worst-case construction day. Although the routes of the trucks would vary, most would travel on Third Street between the project site and Mariposa Street and take Interstate 280 south to US 101. In addition, certain types of construction, such as impact pile driving (with approximately 4,600 total piles for the buildings, pile-supported streets, and China Basin Park area and an additional 106 piles for Pier 48 construction), would generate persistent, time-varying noise levels, which can be highly annoying.

Given the information provided by the project sponsor, it is anticipated that construction of the project would require the equipment shown in Table 4.F-12 on the following page. For each equipment type in Table 4.F-12, the corresponding L_{max} values at a distance of 50 feet from the source are shown, based on the FHWA *Road Construction Noise Model User's Guide*. L_{max} values at 100 feet, also shown in Table 4.F-12, were calculated by subtracting 6 dBA from the L_{max} values at 50 feet, based on geometric attenuation for a point source of 6 dB per doubling of distance.

GENERATION OF NOISE LEVELS IN EXCESS OF CITY NOISE ORDINANCE LIMITS

The San Francisco Noise Ordinance limits noise from individual pieces of powered construction equipment to a level of 80 dBA L_{max} at a distance of 100 feet, except for impact equipment (note that L_{max} is the maximum noise that would occur; the average or L_{eq} noise levels are the steady-state sound levels and would be even lower). As shown in Table 4.F-12, individually, all nonimpact equipment that is anticipated to be used for project construction would have a maximum noise level that would be below 80 dBA at 100 feet and would not violate the Noise Ordinance. Because the nearest offsite sensitive land use is 100 feet west of the project site (see Table 4.F-6, page 4.F-10), the maximum noise from each individual piece of nonimpact construction equipment would be less than 80 dBA at the nearest sensitive land use. Noise from

TABLE 4.F-12. TYPICAL CONSTRUCTION NOISE EMISSION LEVELS FOR PROJECT CONSTRUCTION EQUIPMENT

Equipment	L_{max} at 50 feet (dBA)[a]	L_{max} at 100 feet (dBA)[b]
Air Compressor	78	72
Backhoe	78	72
Berm Machine[c]	85	79
Concrete Mixer Truck	79	73
Concrete Pump Truck	81	75
Crane	81	75
Dozer	82	76
Drill[d]	84	78
Dump Truck	76	70
Excavator	81	75
Forklift[e]	84	78
Front-end Loader	79	73
Generator	81	75
Jet Grout Rig[f]	85	79
Jet Grout Pump[g]	81	75
Roller	80	74
Paver	77	71
Pickup Truck	75	69
Pile Driver (Impact)	101	95
Pile Driver (Vibratory)	101	95
Scraper	84	78
Trencher[h]	80	74
Water Truck[i]	76	70
Welder	74	68

Source: Federal Highway Administration. 2006. *Roadway Construction Noise Model User's Guide*. Available: http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf. January. Washington, DC.
Mesikepp, Sam. Hathaway Dinwiddie Construction Company. August 31, 2016—written communication.
Notes:

a. These values represent the loudest noise levels generated by each equipment type at a distance of 50 feet.
b. These values were calculated by subtracting 6 dBA from each L_{max} value at 50 feet, based on geometric attenuation for a point source.
c. Represented by All Other Equipment > 5 horsepower from FHWA *User's Guide*.
d. Represented by Auger Drill Rig from FHWA *User's Guide*.
e. Represented by Tractor from FHWA *User's Guide*.
f. Represented by All Other Equipment > 5 horsepower from FHWA *User's Guide*.
g. Represented by Pump from FHWA *User's Guide*.
h. Represented by Slurry Trenching Machine from FHWA *User's Guide*.
i. Represented by Dump Truck from FHWA *User's Guide*.

impact equipment, such as pile drivers, is not limited in this way by the Noise Ordinance as long as appropriate noise control features, as recommended by the manufacturers and approved by the Director of Public Works or the Director of Building Inspection, are in place.

Note that the piles used for the Seawall Lot 337 portion of the proposed project would be steel H-piles, an average range of 175 to 230 feet in length, and each pile would require approximately 10 blows per foot of pile length. For example, a 230-foot-long pile would require approximately 2,300 blows. Given the number of piles and the lengths proposed for the project, impact pile driving would be a substantial contributor to the noise environment during project construction. However, as discussed in Chapter 2, *Project Description*, all impact equipment used for project construction would be equipped with the appropriate noise control features as required by the City Noise Ordinance; noise from impact equipment equipped with such features would be in compliance with the City Noise Ordinance regardless of the noise levels generated. Additionally, according to the City Noise Ordinance, construction activities are generally prohibited between the hours of 8:00 p.m. and 7:00 a.m. if the noise created exceeds the ambient noise level by 5 dBA at the nearest property line. If noise is generated between the hours of 8:00 p.m. and 7:00 a.m. that exceeds the ambient noise level by 5 dBA, a violation would occur. However, to ensure that the 5 dBA requirement would not be exceeded (i.e., to comply with the City Noise Ordinance), project construction would not occur between the hours of 8:00 p.m. and 7:00 a.m., as described in Chapter 2, *Project Description*. Thus the project would comply with the City's Noise Ordinance, and impacts related to compliance with local standards related to construction noise from nonimpact equipment would be ***less than significant***.

GENERATION OF COMBINED CONSTRUCTION EQUIPMENT NOISE LEVELS IN EXCESS OF THE FTA ASSESSMENT CRITERIA

Because the Noise Ordinance does not include a combined construction equipment noise standard or establish a noise limit for impact equipment, modeled combined construction noise (including noise from impact equipment) is considered by comparing noise levels that would be generated by project construction to FTA guidance criteria (described in the *Methods for Analysis* section). Comparing construction noise levels to the FTA guidelines will help ensure appropriate noise protection for nearby noise-sensitive land uses.

To address the issue of combined noise levels (including noise from impact equipment), a reasonable worst-case scenario, combining noise levels from the two loudest pieces of equipment operating simultaneously at the same location, is presented below. Simultaneous operation of a pile driver (impact or vibratory) and a jet grout rig (refer to Table 4.F-12 on the previous page) would result in the noise levels shown in Table 4.F-13, on the following page. Note that it is unlikely that these two loudest pieces of equipment would be operating in the same location simultaneously for any substantial amount of time; however, the analysis below provides a reasonable worst case.

TABLE 4.F-13. CALCULATED CONSTRUCTION NOISE EMISSION LEVELS

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	L_{eq} Sound Level (dBA)
Pile Driver Sound Level (dBA) at 50 feet =	101	0.2	94.0
Jet Grout Rig[a] Sound Level (dBA) at 50 feet =	85	0.5	82.0
Distance between Source and Receiver (feet)	**Geometric Attenuation (dB)**	**Calculated L_{max} Sound Level (dBA)**	**Calculated L_{eq} Sound Level (dBA)[b]**
50	0	101	94
100	-6	95	88
200	-12	89	82
266	-15	87	80
300	-16	86	79
400	-18	83	76
500	-20	81	74
600	-22	80	73
685	-23	78	72
700	-23	78	71
800	-24	77	70
900	-25	76	69
1,000	-26	75	68
1,200	-28	74	67
1,400	-29	72	65
1,600	-30	71	64
1,800	-31	70	63
2,000	-32	69	62
2,500	-34	67	60
3,000	-36	66	59

a. Represented by all other equipment > 5 horsepower, from FHWA User's Guide.

b. The combined L_{eq} sound level is compared to the FTA general assessment construction noise criteria (90 dBA daytime 1-hour L_{eq}) to assess impacts from combined construction noise.

Combined noise levels from the two loudest pieces of equipment operating simultaneously could be as high as 95 dBA L_{max} and 88 dBA L_{eq} at the residential uses on Mission Bay Block 1 and Block 2 (at approximately 100 feet), as shown in Table 4.F-13. As discussed above, the City uses the FTA general assessment construction noise criterion (90 dBA daytime 1hour L_{eq}) to assess potential impacts from combined construction noise. Therefore, at the residential uses on Mission Bay Block 1 (which represent the nearest sensitive receptors), noise levels would be up to approximately 88

dBA L_{eq} and therefore would not result in noise levels in excess of the FTA criterion of 90 dBA L_{eq}. Because noise levels at a distance of 100 feet would not exceed the applicable FTA criteria, combined construction noise would not exceed the 90 dBA L_{eq} criterion at other nearby sensitive receptors that are located even farther away. Construction noise impacts related to an exceedance of the FTA criteria for combined construction noise would be ***less than significant.***

GENERATION OF A SUBSTANTIAL TEMPORARY INCREASE IN NOISE BASED ON THE FTA ASSESSMENT CRITERIA

As described above, combined construction noise levels at the nearest sensitive land use (Mission Bay Blocks 1 and 2) could be up to 88 dBA L_{eq}. To determine if a substantial temporary increase in noise would occur, ambient noise measurements from the field survey were compared to this combined construction noise level to determine if a 10 dB increase over ambient conditions at the nearest sensitive receptor would occur. A 10 dB increase is considered a substantial temporary increase.[31]

Figure 6 in Appendix 5 displays the hourly L_{eq} data from the long-term measurements that were used to calculate the L_{dn} values reported in Table 4.F-7, page 4.F-13. The lowest 1-hour daytime L_{eq} from the long-term noise measurements located near noise-sensitive receptors can be conservatively used as an ambient noise level for this area (the 1-hour daytime L_{eq} long-term noise measurements include an hourly L_{eq} for each hour included in the measurement). The lowest 1-hour L_{eq} during normal daytime hours (7:00 a.m. to 8:00 p.m.) near Mission Bay Block 2 (LT-3) was 68.6 dBA L_{eq}, which occurred on Sunday, August 30, 2015 (at 8:00 a.m.). This ambient noise level can be compared to expected construction noise levels to assess the significance of potential noise effects related to a substantial temporary increase in noise. Because construction noise would occur for approximately 6 years, construction noise may not be considered temporary by those most affected.

As discussed previously, pile driving was occurring during the noise field survey and will continue for several months. As such, it was not possible to conduct the long-term (24-hour) noise survey without the inclusion of noise from pile driving during most of the daytime hours. The lowest 1-hour L_{eq} conservatively represents a reasonable ambient noise level for the project area because it is likely that pile driving was not occurring during that hour (noise levels with pile driving occurring would have been much higher); it is also likely that the noise source responsible for the measured noise level was traffic in the area. As such, an ambient noise level of 69 dBA L_{eq} (from measurement location LT-3 during the 8:00 a.m. hour on Tuesday, August 30, 2015, as discussed above) was used in this analysis.

[31] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. Office of Planning and Environment. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed: October 6, 2015.

A comparison of the modeled combined construction noise level of approximately 88 dBA L_{eq} at Mission Bay Block 2 to the ambient noise level of 69 dBA L_{eq} indicates that project construction could result in noise levels approximately 19 dB greater than the existing ambient condition (not including current temporary construction noise in the area). Because construction noise would exceed the ambient noise level by more than 10 dB, the project is expected to result in a substantial increase in ambient noise in the project area for the duration of project construction. Construction is anticipated to occur until 2023. Thus, the impact related to a substantial temporary increase in noise would be significant.

CONSTRUCTION NOISE IMPACTS ON ONSITE LAND USES

Construction noise would affect new onsite receptors because onsite buildings would be occupied while construction would be occurring on other parts of the project site.

GENERATION OF NOISE LEVELS IN EXCESS OF CITY NOISE ORDINANCE LIMITS

As noted above in the discussion of construction noise impacts on existing land uses, project-related construction activities would not be expected to violate the section of the City's Noise Ordinance pertaining to individual pieces of construction equipment generating noise levels greater than 80 dBA at a distance of 100 feet. As also discussed above, construction activities would not occur between the hours of 8:00 p.m. and 7:00 a.m., and all impact equipment used for project construction would be equipped with the appropriate noise control features, as required by the City Noise Ordinance. Therefore, project construction would comply with the City Noise Ordinance. Impacts related to compliance with local standards would be ***less than significant***.

GENERATION OF COMBINED CONSTRUCTION EQUIPMENT NOISE LEVELS IN EXCESS OF THE FTA ASSESSMENT CRITERIA

Although project construction would often occur more than 100 feet away from an occupied onsite use, resulting in noise levels of less than 90 dBA L_{eq}, it is possible that onsite construction could occur closer than 100 feet away from onsite occupied uses. As discussed above, at a distance of 50 feet, combined construction equipment noise levels could be up to 94 dBA L_{eq}. It is possible that construction activity could occur within 50 feet of occupied onsite uses. As such, it is possible that noise levels at occupied onsite uses could be in excess of the FTA criteria of 90 dBA at residential uses. This impact would be significant.

GENERATION OF A SUBSTANTIAL TEMPORARY INCREASE IN NOISE BASED ON THE FTA ASSESSMENT CRITERIA

As described above, combined construction noise levels at future onsite residences (the occupants of which may be in the buildings prior to the completion of construction) could be in the range of 88 dBA L_{eq} to 94 dBA L_{eq} (if the residences are approximately 50 to 100 feet from construction activities). Although construction may be occurring when the residents move into the onsite buildings, the ambient noise level in the vicinity of the project site is considered to be the noise level without constant construction. As described above for offsite receptors, the ambient noise level near the project site was conservatively estimated to be approximately 69 dBA

L_{eq}. A comparison of the modeled combined construction noise level of approximately 88 to 94 dBA L_{eq} at 50 to 100 feet from construction activity, respectively, to the ambient noise level of 69 dBA L_{eq} indicates that project construction could result in noise levels that would be 19 to 25 dB greater than the existing condition. Because construction noise would exceed the ambient noise level at onsite residences by more than 10 dB, the project would result in a substantial increase in ambient noise. In addition, construction activities would occur for approximately 6 years. Thus, the impact related to a substantial temporary increase in construction noise for onsite receptors would be significant.

MITIGATION MEASURE. Noise from construction equipment, including impact and nonimpact equipment, would not violate the City's Noise Ordinance. However, construction activities associated with project-related development could expose onsite sensitive receptors to noise levels that would be in excess of the 90 dBA L_{eq} FTA daytime criterion. Further, construction noise could result in a substantial (more than 10 dB) temporary increase in ambient noise levels at both onsite and offsite receptors. Mitigation Measure M-NOI-1, described below, and Mitigation Measure M-NOI-3.1, on page 4.F-60, would reduce noise effects associated with project construction at both onsite and offsite receptors. Although this measure would reduce construction noise levels, as well as the severity of construction noise impacts on sensitive receptors, because of the project's close proximity to offsite receptors (and potentially occupied onsite receptors during construction), it would not be possible to guarantee that the increase in ambient noise levels during construction would be less than 10 dB. In addition, it would not be possible to guarantee that noise levels at onsite occupied residences would be below 90 dBA L_{eq} during project construction because the project phasing is not sufficiently detailed at this time to determine whether the project's buildings could shield future residents from future construction noise. Therefore, even with incorporation of Mitigation Measures M-NOI-1 and M-NOI-3.1, which would reduce the severity of this impact, construction noise impacts would be ***significant and unavoidable***.

M-NOI-1: *Prepare and Implement a Construction Noise Control Plan to Reduce Construction Noise at Noise-Sensitive Land Uses.* The project sponsor shall develop a noise control plan that requires the following:

- Construction contractors shall specify noise-reducing construction practices that will be employed to reduce construction noise from construction activities. The measures specified by the project sponsor shall be reviewed and approved by the City prior to the issuance of building permits. Measures that can be used to limit noise include, but are not limited to, those listed below.
    - Locate construction equipment as far as feasible from noise-sensitive uses.

- Require that all construction equipment powered by gasoline or diesel engines have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- Idling of inactive construction equipment for prolonged periods shall be prohibited (i.e., more than 5 minutes).
- Prohibit gasoline or diesel engines from having unmuffled exhaust systems.
- Use noise-reducing enclosures around noise-generating equipment that has the potential to disturb nearby land uses.
- Ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) wherever feasible.
- Monitor the effectiveness of noise attenuation measures by taking noise measurements. A plan for noise monitoring shall be provided to the City for review prior to the commencement of each construction phase.

- Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be "quiet" gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used; which could achieve a reduction of 5 dBA. Quieter equipment shall be used when feasible, such as drills rather than impact equipment.
- Construction contractors shall be required to use "quiet" gasoline-powered compressors or electrically powered compressors and electric rather than gasoline- or diesel-powered forklifts for small lifting.
- Stationary noise sources, such as temporary generators, shall be located as far from nearby receptors as possible; they shall be muffled and enclosed within temporary enclosures and shielded by barriers, which could reduce construction noise by as much as 5 dB, or other measures, to the extent feasible.
- Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the Planning

Department and Department of Building Inspection a list of measures for responding to and tracking complaints pertaining to construction noise. These measures shall include:

- Identification of measures that will be implemented to control construction noise.
- A procedure and phone numbers for notifying the Department of Building Inspection, the Department of Public Health, or the Police Department of complaints (during regular construction hours and off hours).
- A sign posted onsite describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction.
- Designation of an onsite construction complaint and enforcement manager for the project.
- A plan for notification of neighboring residents and nonresidential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise-generating activities (defined as activities that generate noise levels of 90 dBA or greater) about the estimated duration of the activity and the associated control measures that will be implemented to reduce noise levels.

Impact NOI-2. Operation of the proposed project could result in the exposure of persons to or generation of noise levels in excess of the San Francisco Noise Ordinance or a substantial temporary, periodic or permanent increase in ambient noise levels in the project vicinity, above levels existing without the project. (Significant and Unavoidable)

TRAFFIC NOISE IMPACTS ON OFFSITE LAND USES

The project would lead to an increase in traffic in the vicinity of the project site, as detailed in Section 4.E, *Transportation*. As discussed in the *Methods for Analysis* section, when assessing traffic noise impacts, the following thresholds are applied to determine the significance of project-related traffic noise increases: (1) An increase of more than 5 dBA is considered a significant traffic noise increase, regardless of the existing ambient noise level, and (2) 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 (Table 4.F-11, page 4.F-20), any noise increase greater than 3 dBA is considered a significant traffic noise increase. According to the General Plan Noise Element, a noise level of up to 60 dBA L_{dn} is considered satisfactory for residential land uses, and a noise level of 70 dBA L_{dn} is considered satisfactory for office and most commercial uses.

For residential receptors located adjacent to a roadway, the 60 dBA L_{dn} "satisfactory" noise standard from the City Noise Element would apply. Standard construction can typically provide an exterior-to-interior noise reduction of up to 20 dB.[32] A noise reduction in the range of 25 to 35 dB is achievable with upgraded acoustical treatments and the Noise Element of the General Plan allows noise levels at residential land uses to be up to 70 dBA L_{dn} if all needed noise insulation features are included in the design of the building. However, this analysis uses the 60 dBA L_{dn} allowable noise level of the City Noise Element as the basis for the analysis of project traffic effects on residential uses (where up to a 5 dB increase is allowable for roadways segments with resultant noise levels below this noise level, and a 3 dB increase is allowed for roadways segments with resultant noise levels above this noise level).

The proposed project would be subject to the California Building Standards Code (Title 24), which establishes uniform noise insulation standards. The Title 24 acoustical requirement for residential structures (including hotels) is incorporated into the Port of San Francisco Building Code and requires structures to be designed to prevent the intrusion of exterior noise so that the noise level with windows closed attributable to exterior sources does not exceed 45 L_{dn} in any habitable room. Title 24 allows the project sponsor to choose between a prescriptive or performance-based acoustical requirement for nonresidential uses. Both compliance methods require wall, floor/ceiling, and window assemblies to meet certain sound transmission class or outdoor/indoor sound transmission class ratings to ensure that adequate interior noise standards are achieved. In compliance with Title 24, the Port would review the final building plans to ensure that the building wall, floor/ceiling, and window assemblies meet Title 24 acoustical requirements. If determined necessary by the Port, a detailed acoustical analysis of the exterior wall and window assemblies may be required. However, as long as noise levels at the exterior of a residential building comply with the 60 dBA L_{dn} standard, it is likely that interior noise levels would comply with the Title 24 allowable interior noise level of 45 dBA using standard construction materials.

An initial analysis was conducted using a reference distance of 50 feet from each roadway segment centerline. Refer to Appendix 5 for these modeling results. Modeling demonstrated that noise levels along two segments would increase by 3 dB or more in areas where with-project noise levels affecting residential uses would exceed 60 dBA L_{dn}. In addition, project-generated traffic would increase noise levels by 5 dB or more along one segment where existing and existing plus-project noise levels were modeled to be 60 dBA L_{dn} or less. This impact would be significant.

Table 4.F-14 on the following page presents existing noise levels and the project-generated noise increases that would occur along the affected roadway segments.

[32] Federal Highway Administration. 2011. *Highway Traffic Noise: Analysis and Abatement Guidance*. December.

TABLE 4.F-14. DIRECT TRAFFIC NOISE LEVELS AND POTENTIAL IMPACTS AT 50 FEET FROM ROADWAY CENTERLINE

Roadway	Segment	Receptor Land Use Type	Compatibility Standard (dBA L_{dn})	Existing dBA L_{dn} at 50-foot Distance	Existing plus-Project (2020) dBA L_{dn} at 50-foot Distance	Difference (dB)	Significant Impact Due To
Segments where with-project noise levels are > 60 dBA L_{dn} and the increase in noise from existing conditions is > 3 dB (exceed standard and significant permanent increase)							
Fourth Street	King Street to Fourth Street Bridge	R	60	57	61	4	> 3 dB increase in areas > 60 dBA L_{dn}
Mission Rock Street	Terry A. Francois Boulevard to Third Street	R	60	50	62	12	> 3 dB increase in areas > 60 dBA L_{dn}
Segments where with-project noise levels are < 60 dBA L_{dn} but the increase in noise from existing conditions is > 5 dB (significant permanent increase)							
Mission Rock Street	Third Street to Fourth Street	R	60	48	58	10	Greater than 5 dB increase (regardless of existing noise level)

Notes:

Refer to Appendix 5 for the full modeling results. Although values presented in this table are rounded to the nearest value, impact determinations were made prior to rounding to ensure an accurate presentation of impacts, as shown in Appendix 5.

Note that an increase of 5 dB is clearly noticeable in any environment and therefore considered to be significant regardless of existing noise levels; an increase of 3 dB, although barely noticeable, is considered a substantial increase in degraded noise environments (e.g. existing noise levels of greater than 60 dBA L_{dn})

R = residential (including hotel use)

As shown in Table 4.F-14, on the previous page, project-added traffic would result in a substantial permanent increase in noise (a 5 dB increase in any environment or a 3 dB increase in areas where existing or resulting noise levels are greater than 60 dBA L_{dn}) along three segments: Fourth Street from King Street to Fourth Street Bridge, Mission Rock Street from Terry A. Francois Boulevard to Third Street, and Mission Rock Street from Third Street to Fourth Street.

No noise-sensitive land uses are currently located along the segment of Mission Rock Street between Terry A. Francois Boulevard and Third Street. This area is proposed for residential development as Blocks 9 and 9A of the Mission Bay Redevelopment Plan, which would be located along the south side of this roadway segment. Such development would be designed to comply with Title 24 and applicable City noise regulations. The segment of Mission Rock Street between Third Street and Fourth Street has residential uses located on both sides of the street. The segment of Fourth Street from King Street to the Fourth Street Bridge also has residential uses on both sides of the street. These uses are relatively new development and most likely also include noise attenuation measures to ensure compliance with Title 24 and with City noise regulations.

Although it is likely that the residential developments located along segments where a project-related substantial permanent increase in traffic noise may occur would not experience unacceptable interior noise levels, the proposed project's traffic would still result in a substantial permanent increase in ambient noise levels along the three segments. Although mitigation in the form of sound walls were considered to reduce the project's traffic noise impacts, it was determined that this mitigation was infeasible in this dense urban area, with residential buildings located close to roadways. Mitigation Measure M-AQ-2.3, on page 4.G-63, requires preparation of a transportation demand management plan with a goal of reducing one-way vehicle trips by 20 percent. This mitigation measure could reduce the amount of traffic on roadway segments that experience a significant traffic noise increase, but it would be speculative to quantify the precise number of vehicle trips (and hence vehicle-related noise) reduced along any given segment. Because these impacts could not be reduced to less-than-significant levels, traffic noise impacts related to a substantial permanent increase in noise would be ***significant and unavoidable with mitigation***.

NOISE FROM ONSITE OUTDOOR USE AREAS TO OFFSITE LAND USES

The proposed project would include development of a number of public open spaces, including Mission Rock Square and China Basin Park (along with other proposed outdoor spaces). The proximity of existing and proposed future residential uses to these types of open space uses would pose the potential for residents to be disturbed or annoyed by noise from outdoor space activities. It is not known at this time what specific events may occur and what the associated noise levels would be. However, promoters of any proposed outdoor events on the site's outdoor plaza that would use amplified sound or music would be required to obtain a permit

from the City prior to the event. Section 1060.1 of the Police Code requires a permit to conduct, operate, or maintain a place of entertainment, limited live performance locale or one-time event within the City and County of San Francisco. The Entertainment Commission may deny a permit on a finding that the use will generate noise that would substantially interfere with the public health, safety and welfare or the peaceful enjoyment of neighboring property.

Concerts in the proposed open spaces would require the promoter to obtain a Limited Live Performance Permit from the San Francisco Entertainment Commission. This permit process requires a public hearing and includes a requirement for neighborhood outreach. Article 1, Section 47.2 of the Police Code, while generally focused on truck-mounted amplification equipment, regulates the use of any sound amplifying equipment, whether truck-mounted or otherwise. Hours of operation are restricted to between 9:00 a.m. and 10:00 p.m., unless permitted by the San Francisco Entertainment Commission.

Rather than permits for individual events, the project sponsor may seek to obtain approval on an annual or other periodic basis of a schedule of planned events and, subsequently, an event plan, which would include conditions of approval that would govern hours of operation and noise levels, similar to the requirements that otherwise would be imposed by individual event permits issued pursuant to the Police Code.

Events in the proposed open spaces would also be subject to the Port of San Francisco's adopted Good Neighbor Standards, as described above under *Regulatory Framework*. However, due to uncertainties as to the nature and extent of future outdoor events at the project site (including if amplified speech or music would occur at such events), the potential for the use of amplified sound equipment could result in noise levels in excess of standards established in the San Francisco General Plan or San Francisco Noise Ordinance. This would be a ***significant impact***.

MITIGATION MEASURE. Sensitive receptors may be subject to noise levels in excess of Section 2909 of the City's Police Code as a result of events with amplified sound in the project's public open spaces. Implementation of Mitigation Measure M-NOI-2.1: Noise Control Plan for Outdoor Amplified Sound, shown below, would reduce this impact but, due to the close proximity of residences to the public open spaces and uncertainties regarding the frequency, duration and character of events with amplified sound, this impact would continue to be considered significant and unavoidable with mitigation. Section 2909 of the City's Police Code establishes a not-to-exceed (except through a variance) noise standard for fixed sources of noise and from events subject to regulation by the Entertainment Commission. Event noise generated from a public property would be limited to 10 dBA above the local ambient noise level at a distance of 25 feet or more; event noise generated from a commercial property would be limited to 8 dBA above the local ambient at any point outside the property plane. In addition, compliance with Section 2909(d) would limit noise from outdoor activities in residential interiors to 45 dBA between 10:00 p.m. and 7:00 a.m. or 55 dBA between 7:00 a.m.

and 10:00 p.m. with windows open. Any variance to these limits granted pursuant to Section 2910 of the Police Code could only be approved through the Entertainment Commission hearing process required by Section 1060.1 of the Police Code or an approved event plan. Mitigation Measure M-NOI-2.1 would also require compliance with the Port's adopted "Good Neighbor" standards, unless the Port Commission makes a specific finding that a particular condition is unnecessary or infeasible. However, because a variance to the code may be sought and it is likely the following mitigation measure would not guarantee that the standards in the Noise Ordinance would be met with implementation of Mitigation Measure M-NO-2.1, Noise Control Plan for Outdoor Amplified Sound, and with compliance with Sections 47.2, 1060.1 and 2909 of the Police Code, periodic and temporary noise increases associated with special events would be reduced but, because their frequency, duration and character are not known at this time (e.g., some events could seek waivers from Police Code provisions and/or continue later than 10:00 p.m.), this impact would remain ***significant and unavoidable*** under CEQA, even though such Police Code exceedances would be subject to review and permitted**.**

M-NOI-2.1: Noise Control Plan for Special Outdoor Amplified Sound. To reduce potential impacts related to noise generated by events in project outdoor use areas, the project sponsor shall develop and implement a Noise Control Plan for operations at the proposed entertainment venues to reduce the potential for noise impacts from public address and/or amplified music. This Noise Control Plan shall contain the following elements:

- The project sponsor shall comply with noise controls and restrictions in applicable entertainment permit requirements for outdoor concerts, and shall comply with the Port of San Francisco's "Good Neighbor" standards, unless the Port Commission makes a specific finding that a particular condition is unnecessary or infeasible.
- Speaker systems shall be directed away from the nearest sensitive receptors to the degree feasible.
- In order to limit or prevent sleep disturbance, events with amplified sound shall, to the extent reasonable and appropriate given the nature and context of the event, end at 10:00 p.m.

STATIONARY OPERATIONAL NOISE IMPACTS ON OFFSITE LAND USES

Noise from stationary mechanical equipment would include onsite noise generated by HVAC units, emergency generators, and other building equipment. Operation of HVAC equipment at the proposed project buildings would be subject to Sections 2909(a) and (b) of the Noise Ordinance, which limit noise produced on residential or commercial properties to no more than 5 and 8 dBA, respectively, above the ambient at any point outside the property plane. Further, stationary operational noise is limited by Section 2909(d) of the Noise

Ordinance, which provides that noise from stationary equipment at residential interiors cannot exceed 55 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). Depending on the size of the equipment, HVAC equipment can produce sound levels in the range of 70 to 75 dBA at 50 feet.[33] If HVAC equipment is located 50 feet from the property line, noise levels could be as high as 75 dBA at the property line. The property-line noise level could be higher or lower than this if the actual distance is less than or greater than 50 feet. With the ambient sound level at about 69 dBA, the potential exists for both the 5 dB and 8 dB property-line noise limits to be exceeded. This would be a ***significant*** impact.

At a distance of 100 feet, the distance to the residential uses at Mission Bay Block 1, noise from project HVAC equipment would be in the range of 64 to 69 dBA, assuming attenuation of 6 dB from the 50-foot HVAC noise levels, based on distance alone. Exterior-to-interior noise reduction is typically about 10 dB with windows open and up to about 25 dB with windows closed.[34] This indicates that interior noise at the nearest residences could be as high as approximately 59 dBA with windows open and 44 dBA with windows closed. This also indicates that HVAC noise from new project buildings (without the incorporation of attenuation measures) could result in an exceedance of the 55 dBA daytime (7:00 a.m. to 10:00 p.m.) and 45 dBA nighttime (10:00 p.m. to 7:00 a.m.) Noise Ordinance interior limits at nearby existing buildings. This would be a ***significant*** impact.

It is assumed that Seawall Lot 337 would include eight emergency generators, and Pier 48 would include two (for a total of 10 generators); however, the locations of the generators are not currently known with certainty. To provide a reasonable worst-case analysis, this analysis assumes that the locations of the generators would be at the perimeter of the project site. Under this assumption, the distances from the generators to the nearest sensitive land uses would be those shown in Table 4.F-6 (page 4.F-10).

Emergency generators create temporary and periodic noise from testing. Sound levels from generators vary, depending on the type of generator and the noise attenuation that has been incorporated into the design and placement. As described in Chapter 2, *Project Description*, emergency generators would operate an average of 50 hours per year. Given the temporary and periodic nature of emergency generator testing, generators would not permanently increase ambient noise levels; however, the generators would be subject to the interior noise standard from the City's Noise Ordinance of 55 dBA daytime and 45 dBA nighttime for residential land uses. Without accounting for noise attenuation, a single emergency generator (assuming the generators are not tested concurrently) may generate a sound level of up to 75 dBA at the

[33] Hoover and Keith. 2000. *Noise Control for Buildings, Manufacturing Plants, Equipment, and Products*. Houston, TX.

[34] Federal Highway Administration. 2011. *Highway Traffic Noise: Analysis and Abatement Guidance*. December.

nearest sensitive land use (residential uses at Mission Bay Block 1).[35] Given the analysis discussed above, noise in the residential sleeping or living rooms of offsite uses (e.g., in the Mission Bay Block 1 residences) could exceed 45 dBA between 10:00 p.m. and 7:00 a.m. and/or 55 dBA between 7:00 a.m. and 10:00 p.m. (Noise Ordinance Section 2909[d]). Further, these noise levels could also result in increases in ambient noise levels of 5 dB or more at property line of the equipment generating the noise (Noise Ordinance Section 2909[a]). This impact could be significant. However, compliance with Section 2909 of the Municipal Code could be accomplished by incorporating a variety of attenuation measures to reduce noise levels to below the 55 dBA daytime and 45 dBA nighttime interior standards and ensure that any noise increase from stationary equipment at the property line would not exceed the 5 dB and 8 dB limits above ambient noise levels, as determined by a qualified acoustical consultant.

Acoustical treatments may include, but are not limited to:

- Construction of enclosures around noise-generating mechanical equipment
- Installation of relatively quiet models of mechanical equipment
- Use of muffler or silencers on equipment exhaust fans
- Orientation or shielding of equipment to protect sensitive uses to the greatest extent feasible
- Placement of barriers around the equipment
- Limiting the testing of emergency generators to daytime hours (8:00 a.m. to 6:00 p.m.)
- Limiting the testing of emergency generators such that only one generator is tested at a given time to limit the effects of additive noise from the equipment.

STATIONARY OPERATIONAL NOISE IMPACTS ON ONSITE LAND USES

Project buildings would include HVAC equipment that could affect proposed project residences. As discussed above, stand-by emergency power generators may also be located in several buildings associated with the project. As discussed above, noise from stationary mechanical equipment can produce sound levels in the range of 70 to 75 dBA at 50 feet. Thus, it is possible that HVAC equipment or emergency generator testing at proposed project buildings could result in excessive noise. CCR Title 24 requires new residences to incorporate noise insulation to attenuate existing exterior noise such that interior noise levels are below 45 dBA L_{dn}. As required by Mitigation Measure M-NOI-2.2, stationary equipment would be subject to the City Noise Ordinance (specifically, Section 2909[a], 2909[b], and 2909[d], which limit the project-related increase in noise to 5 dB and 8 dB for residential and commercial/industrial uses at the property

[35] This value assumes an L_{max} of 81 dBA for a generator (see Table 4.F-11) and an attenuation of 6 dBA over a distance of 100 feet.

line, respectively, and interior noise levels to 45 dBA between 10:00 p.m. and 7:00 a.m. and 55 dBA between 7:00 a.m. and 10:00 p.m.). Mitigation Measure M-NOI-2.2 requires compliance with the City Noise Ordinance through acoustical treatments to attenuate noise from stationary sources (e.g., installing construction enclosures or barriers around equipment, using quiet models of equipment, incorporating mufflers or silencers on exhaust fans, etc.) such that interior noise limits are met under both existing and future noise conditions, accounting for foreseeable changes in noise conditions in the future (i.e., changes in onsite building configurations and locations of sensitive residential receptors). Acoustical treatments required by Mitigation Measure M-NOI-2.2 would ensure that project equipment noise levels would comply with Police Code Section 2909 requirements with respect to both existing offsite and future onsite land uses. Therefore, with implementation of Mitigation Measures M-NOI-2.2, potential noise impacts resulting from stationary equipment would be ***less than significant*** for onsite uses.

MITIGATION MEASURE. As specified in Mitigation Measure M-NOI-2.2: Stationary Equipment Noise Controls, application of such noise attenuation measures would ensure that noise from stationary equipment would not exceed the limits of the City's Noise Ordinance Section 2909(a) and (b) limits of 5 dBA and 8 dBA at residential and commercial property lines, respectively, or the Section 2909(d) interior noise limit of 55 dBA daytime and 45 dBA nighttime for residential land uses at the Mission Bay Block 1 and new project residential buildings. Therefore, with incorporation of Mitigation Measure M-NOI-2.2: Stationary Equipment Noise Controls, noise from onsite stationary mechanical equipment would be ***less than significant.***

M-NOI-2.2: Stationary Equipment Noise Controls

Noise attenuation measures shall be incorporated into all stationary equipment (including HVAC equipment and emergency generators) installed on all buildings that include such stationary equipment as necessary to meet noise limits specified in Section 2909 of the Police Code. Interior noise limits shall be met under both existing and future noise conditions, accounting for foreseeable changes in noise conditions in the future (i.e., changes in onsite building configurations). 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.

TRUCK DELIVERY NOISE IMPACTS ON OFFSITE LAND USES

Truck deliveries to commercial uses and the Pier 48 industrial use, specifically analyzed as a proposed brewery use, associated with the proposed project would be anticipated to occur daily. Trucks used to pick up and deliver supplies at the project site would generate

intermittent noise (e.g., from engine idling, trailer-mounted refrigeration units, pallets dropping, the operation of forklifts, beeping from backup warning signals). Refer to Figure 2-15, *Proposed Parking Plan,* for the location of proposed loading docks. State law currently prohibits heavy-duty diesel delivery trucks from idling more than 5 minutes.[36] It is currently assumed that truck deliveries would occur 7 days per week, 24 hours per day. A maximum of 877 truck deliveries per day could occur throughout the project site (e.g., at the Pier 48 facility and along Terry A. Francois Boulevard and the future Long Bridge and Exposition Streets).

Although the City Noise Ordinance does not specifically regulate noise from delivery trucks, the Fixed Residential Interior Noise Limits, Section 2909(d), which are used to assess HVAC and generator noise impacts (i.e., noise levels above 45 dBA between 10:00 p.m. and 7:00 a.m. and 55 dBA between 7:00 a.m. and 10:00 p.m.), provide a reasonable standard for CEQA purposes for assessing noise from delivery trucks at a single location at sensitive receptors. Sections 2909(a) and (b) can also be used to assess truck delivery noise at a particular location. A significant impact related to a substantial temporary increase in noise would occur if noise were to be generated from a stationary source located on residential or commercial/industrial property that was 5 dB or 8 dB, respectively, above the ambient noise level at any point outside of the property line of the residential or commercial/industrial property where the noise is generated from. Typical hourly noise levels for loading dock operations range from 55 to 60 dBA L_{eq} and from 80 to 84 dBA L_{max} at a distance of 50 feet.[37]

The offsite residential land uses closest to a potential loading location would be the future residential development in Block 9A of the Mission Bay Redevelopment Plan area (see Figure 2-15, *Proposed Parking Plan*), immediately south of the project site along Mission Rock Street (although there are no immediate plans for construction at Block 9A), and the Mission Bay Block 1 residential uses, directly west of the project site. The future Block 9A development would be more than 100 feet away from the nearest potential delivery location, near the intersection of Terry A. Francois Boulevard and Mission Rock Street. The Mission Bay Block 1 development would be even farther away from the nearest potential loading dock location (more than 200 feet west of the loading dock location near the Long Bridge Street and Third Street intersection). At the Block 9A location, potential noise levels would be reduced from the range listed above (55 to 60 dBA L_{eq}) to approximately 52 to 57 dBA L_{eq} because of attenuation over distance alone. In addition, buildings within Block 9A would be shielded from the nearby delivery location by Block H of the proposed project, thereby further reducing noise levels. Because exterior noise levels at this location would be a maximum of approximately 57 dBA L_{eq} (not considering intervening buildings) and exterior noise levels are generally reduced at

[36] California Air Resources Board. 2006. Final Regulation Order – Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008. October 16.

[37] Recon Environmental. 2015. Noise Report, Lilac Hills Ranch. Specific Plan, General Plan Amendment Rezone EIR. San Diego County, California. June 1.

interior locations by 20 dB (with standard construction materials) to up to 35 dB (with upgraded acoustical treatments),[38] interior noise levels at these residences would be less than the 45 dBA nighttime limit.

At the Mission Bay Block 1 residential uses, noise from the loading docks would be reduced to approximately 49 to 54 dBA L_{eq} at the façade of the closest building because of attenuation over distance alone. Because standard construction can typically provide an exterior-to-interior noise reduction of up to 20 dB,[39] interior noise levels would be much lower than the 49 to 54 dBA L_{eq} range. Further, because the ambient noise level in the project vicinity is estimated to be approximately 69 dBA L_{eq}, noise from loading docks at the aforementioned offsite residential receptors would not result in a 5 dB increase above ambient noise levels and, thus, would not result in a substantial temporary or permanent increase in noise in these areas. No other loading dock locations at the project site would affect existing or proposed offsite sensitive land uses. Based on the above, impacts related to truck deliveries would be ***less than significant***.

TRAFFIC NOISE IMPACTS ON ONSITE LAND USES

Implementation of the proposed project would introduce new noise-sensitive land uses (residential and commercial) to an area where future noise levels may exceed levels in the Land Use Compatibility Chart of the General Plan. Further, the project would increase traffic in the area, and traffic noise levels would subsequently increase to levels above existing conditions. Because the project would add traffic to adjacent roadway segments, some of which have high existing noise levels, future noise levels at proposed project residences must be analyzed and compared to applicable thresholds (as described in the *Methods for Analysis* section).

As with the analysis for *Traffic Noise Impacts on Offsite Land Uses*, presented above, this analysis uses the 60 dBA L_{dn} "satisfactory" noise level of the City Noise Element as the basis for the analysis (where up to a 5 dB increase is allowable for roadways segments with resultant noise levels below this noise level, and a 3 dB increase is allowed for roadway segments with resultant noise levels above this noise level). At this time, the exact distance between the roadway centerline and the proposed onsite residences is not known. However, a reasonable worst-case distance of 50 feet was modeled to ensure any potential impacts would be identified (refer to Table 4.F-15 on the following page for modeled noise levels at future onsite project receptors).

Under both the High Residential and High Commercial land use assumptions, proposed project residences would be located along Third Street and Mission Rock Street.

[38] Federal Highway Administration. 2011. *Highway Traffic Noise: Analysis and Abatement Guidance*. December.

[39] Federal Highway Administration. 2011. *Highway Traffic Noise: Analysis and Abatement Guidance*. December.

TABLE 4.F-15. DIRECT TRAFFIC NOISE LEVELS AND POTENTIAL IMPACTS AT A DISTANCE OF 50 FEET FROM ONSITE RECEPTORS

Roadway	Segment	Existing dBA L_{dn} at 50-foot Distance	Existing plus-Project (2020) dBA L_{dn} at 50-foot Distance	Difference (dB)	Possibility of Significant Impact?	Impact Due To
Mission Rock Street	Terry A. Francois Boulevard to Third Street	50	62	12	**Yes**	Substantial Permanent Increase
Third Street	Terry A. Francois Boulevard to Channel Street	61	63	2	No	NA
Third Street	Channel Street to Mission Rock Street	61	63	2	No	NA
Third Street	Mission Rock Street to Mission Bay Boulevard	61	62	1	No	NA

Notes:

Bold = possibility of significant impact

Note that an increase of 5 dBA is clearly noticeable in any environment and therefore potentially significant regardless of existing noise levels; an increase of 3 dBA, although barely noticeable, is considered a substantial increase in degraded noise environments (e.g., existing or resulting noise levels greater than 60 dBA L_{dn}).

Proposed residential uses located along the segments of Third Street adjacent to the project site (refer to Table 4.F-15, on the previous page) may experience noise levels greater than the City Noise Element "satisfactory" level of 60 dBA L_{dn} (i.e., ranging from 62 to 63 dBA L_{dn}). However, the project's contribution to the noise levels along these segments ranges from 1 to 2 dB, which is less than the allowable increase of 3 dB and would not be perceptible. As such, project traffic noise along these segments would be less than significant. Noise levels along Mission Rock Street from Terry A. Francois Boulevard to Third Street would also be in excess of 60 dBA L_{dn} (approximately 62 dBA L_{dn}), resulting in the exposure of proposed residences along these segments to noise levels in excess of the "satisfactory" level as well. Along this segment, the project-related increase in traffic noise was modeled to be 12 dB. This would be a ***significant*** impact.

CCR Title 24 requires new residences to incorporate noise insulation features to reduce interior noise levels below 45 dBA L_{dn} according to existing noise conditions, not future projected noise conditions. Therefore, to ensure new sensitive receptors are not substantially affected by project-generated traffic noise, future project residences along Mission Rock Street from Terry A. Francois Boulevard to Third Street must be designed to meet the interior noise standard in CCR Title 24 given the anticipated 12 dBA L_{dn} increase in noise levels in this area. Mitigation Measure M-NOI-2.3: Design of Future Noise-Sensitive Uses requires that a noise study be prepared by a qualified acoustician for the project's residential uses proposed along Mission Rock Street in order to determine what noise attenuation measures are necessary to incorporate into building design in order to meet the CCR Title 24 interior noise standard given the projected 12 dB increase in noise along that segment.

MITIGATION MEASURE. Mitigation Measure M-NOI-2.3 requires that noise attenuation measures be incorporated into these units as necessary to ensure that interior noise levels would be maintained at acceptable levels, even with future traffic noise increases. With incorporation of noise attenuation approaches into the project design as necessary in order to meet the 45 dBA interior noise standard of Title 24, as specified in Mitigation Measure M-NOI-2.3, impacts to future residents in buildings on Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street would be reduced to a ***less-than-significant*** level.

M-NOI-2.3: Design of Future Noise-Sensitive Uses.

Prior to issuance of a building permit for a residential building on Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street, a noise study shall be conducted by a qualified acoustician to determine the need to incorporate noise attenuation measures into the building design in order to meet Title 24's interior noise limit for residential uses as well as the City's (Article 29, Section 2909(d)) 45 dBA (L_{dn}) interior noise limit for residential uses. This evaluation shall account for the projected increase in traffic noise as a result of

project traffic along Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street and any new shielding benefits provided by surrounding buildings that exist at the time of development, future cumulative traffic noise increases on adjacent roadways, existing and planned stationary sources (i.e., emergency generators, HVAC, etc.), and future noise increases from all known cumulative projects located with direct line-of-sight to the project building.

Although designing the project to ensure compliance with applicable noise standards would ensure that individual onsite residences would not experience excessive noise, the proposed project's traffic would still result in a substantial permanent increase in ambient noise levels along the segment of Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street (the 12 dB increase which is in excess of the allowable 3 dB). This substantial permanent increase in ambient noise that is expected to occur along the segment of Mission Rock Street from Terry A. Francois Boulevard to Third Street could not be reduced to less-than-significant levels because no feasible mitigation measures would be able to reduce the 12 dB increase resulting from the project's traffic along this segment to less than the allowable 3 dB increase. Therefore, although traffic noise impacts to future project residences would be less than significant with implementation of Mitigation Measure M-NOI-2.3 and M-AQ-2.3 could reduce traffic noise levels by reducing vehicle trips, traffic noise impacts related to a substantial permanent increase in ambient noise would be ***significant and unavoidable*** because it cannot be stated with certainty that M-AQ-2.3 would reduce vehicle trips to the degree necessary to reduce traffic noise levels to less than significant.

TRUCK DELIVERY NOISE IMPACTS ON ONSITE LAND USES

With respect to delivery trucks, if deliveries and associated unloading/loading activities occur in proximity to future residential buildings and during the nighttime hours, future residents could be subject to sleep disturbance by noise from these activities. As described above for offsite noise effects from truck deliveries, typical hourly noise levels from loading dock operations range from 55 to 60 dBA L_{eq} and 80 to 84 dBA L_{max} at a distance of 50 feet.[40] As described in the discussion of truck delivery impacts on offsite land uses, although the City Noise Ordinance does not specifically regulate noise from delivery trucks, the Fixed Residential Interior Noise Limits, Section 2909(d), which are used to assess HVAC and generator noise impacts (i.e., noise levels above 45 dBA between 10:00 p.m. and 7:00 a.m. and 55 dBA between 7:00 a.m. and 10:00 p.m.), provide a reasonable standard for CEQA purposes for assessing noise from delivery trucks at a specific location at sensitive receptors. Sections 2909(a) and (b) can also be used to assess truck delivery noise. A significant impact related to a substantial temporary

[40] Recon Environmental. 2015. *Noise Report, Lilac Hills Ranch*. Specific Plan, General Plan Amendment Rezone EIR. San Diego County, California. June 1.

increase in noise would occur if noise were to be generated from a stationary source located on residential or commercial/industrial property that was 5 dB or 8 dB, respectively, above the ambient noise level at any point outside of the property line of the residential or commercial/industrial property generating the noise.

Some onsite residential land uses would be located immediately adjacent to potential truck delivery locations on the project site (along Exposition Street, Terry A. Francois Boulevard, Bridgeview Street, and Long Bridge Street). Because these residences may be closer than 50 feet from delivery trucks, noise levels could reach a maximum (L_{max}) of 80 to 84 dBA. Average noise levels would be in the range of 55 to 60 dBA L_{eq}. Although the ambient noise level from future onsite project uses cannot be defined, the current ambient noise level in the project vicinity is estimated to be approximately 69 dBA L_{eq}. Temporary and short-duration truck deliveries would not be expected to result in noise levels that would be 5 dB above ambient noise levels. Further, exterior noise levels are generally reduced at interior locations by at least 20 dB with standard construction materials. In addition, the California Air Resources Board limits the idling of diesel trucks (over 10,000 pounds) to no more than 5 minutes, and this rule would help minimize truck idling noise in loading areas.

However, audible warnings are required by Cal-OSHA to be at least 5 dBA above ambient noise levels. These devices are highly directional in nature, and when in reverse, the trucks and the warning alarm would be directed towards the loading area and adjacent commercial-office structures. Audible warnings are, of course, intended to warn persons who are behind the vehicle when it is backing up, and could cause sleep disturbance if they occur during the nighttime (including early morning) hours near residential uses, a potentially significant noise impact. Therefore, interior noise levels from truck delivery operations would result in a substantial temporary or permanent increase in noise in excess of the applicable standards; in addition, onsite residential uses would be substantially affected by future noise levels at the project site.

Locating loading areas on the sides of commercial-office buildings that face away from residential buildings to the extent feasible or designing loading areas with noise shielding (preferably enclosures) or restricting these activities to the daytime hours (7:00 a.m. to 8:00 p.m.), as specified in Mitigation Measure M-NOI-2.4: Design of Future Noise-Generating Uses, first bullet, would reduce the significant impact related to the potential for sleep disturbance of future residents from this noise source to a ***less-than-significant*** level.

MITIGATION MEASURE. Noise associated with trash or refuse facilities for both future residential and commercial-office uses could disturb or annoy any future nearby residents. If such facilities were to operate during nighttime hours, those operations could result in sleep disturbance, resulting in a significant impact. Such noise is typically associated with trash-dumping activities, operation of trash compactors and garbage truck collection activities (including truck noise, operation of motors that lift trash containers, banging of containers

during trash collection activities, and audible warnings when trucks reverse). Trash and refuse facilities should be located to minimize noise impacts to residential buildings. They can also be designed to avoid or minimize the potential for noise disturbance or annoyance at future residences with incorporation of appropriate noise-shielding measures, as specified in Mitigation Measure M-NOI-2.4, first bullet. This would reduce significant noise conflicts from this future use to a ***less-than-significant*** level.

Noise associated with parking cars includes engines starting and car doors slamming. Such noise can cause annoyance at adjacent residential uses if it is concentrated in one area (i.e., a surface parking lot located adjacent to residences), and if it occurs during the evening or nighttime hours, it could cause sleep disturbance, resulting in a significant impact. Parking is proposed in a parking garage located between Mission Rock Street and Long Bridge Street, with residential land use to the garage's south under the High Commercial Land Use assumption and to the south and north under the High Residential Land Use assumption. Under both land use assumptions, residential dwellers could be subject to car noise in the parking garage. Parking facilities can be designed to avoid or minimize the potential for such parking-related noise disturbance or annoyance at future residences with incorporation of appropriate noise-shielding measures into any future parking structures, as specified in Mitigation Measure M-NOI-2.4, second bullet. This would reduce significant noise conflicts from this future use to a ***less-than-significant*** level.

M-NOI-2.4 Design of Future Noise-Generating Uses near Residential Uses.

Future land uses shall be designed to minimize the potential for sleep disturbance (defined as exceeding 45 dBA at residential interiors during the hours of 10 p.m. to 7 a.m.) at any future adjacent residential uses. Design approaches including, but not limited to, the following shall be incorporated into future development plans to minimize the potential for noise conflicts of future uses on the project site:

- Design of Future Noise-Generating Uses. To reduce potential conflicts between sensitive receptors and new noise-generating land uses located adjacent to these receptors, exterior facilities such as loading areas/docks, trash enclosures, and surface parking lots shall be located on the sides of buildings facing away from existing or planned sensitive receptors (e.g., residences). If this is not feasible, these types of facilities shall be enclosed or equipped with appropriate noise shielding.
- Design of Future Above-Ground Parking Structure on Block D2. For parking garage on Block D2, the sides of the parking structures facing adjacent or nearby existing or planned residential uses shall be designed to shield residential receptors from noise associated with parking cars.

Impact NOI-3. Construction of the project would expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to annoyance. Construction of the project could expose persons to or generate excessive ground-borne vibration or ground-borne noise levels related to damage to buildings. (Significant and Unavoidable with Mitigation for Annoyance; Less than Significant with Mitigation for Building Damage.)

This impact discussion addresses issues related to ground-borne vibration from construction activity. Ground-borne vibration generated by traffic traveling on roadways is usually below the threshold of perception at adjacent land uses, unless there are severe discontinuities, such as large potholes, in the roadway surface. This analysis assumes that roadways in the project area are or will be reasonably maintained, with no severe discontinuities. Therefore, no analysis of vibration generated by the project's operational traffic is provided. Construction-related vibration is discussed below. The damage threshold used to assess potential damage to historic buildings is 0.25 in/sec PPV (per Table 4.F-3, page 4.F-7), and the annoyance threshold used to assess potential annoyance-related vibration effects is 0.10 in/sec PPV (or the "strongly perceptible" level for continuous or frequent intermittent sources).

CONSTRUCTION VIBRATION IMPACTS ON OFFSITE RECEPTORS

Construction of the project would require the use of impact devices (e.g., pile drivers, impact hammers/hoe rams, jackhammers), which could generate substantial vibration. During construction of project buildings and foundations, pile driving would be required to drive building foundations into the ground. Note that the adjacent Pier 50 office building, which would be more than 100 feet from pile-driving activities, is considered a potentially historic building; this is the closest potentially historic building located offsite (Caltrans category of "Historic and Some Old Buildings" from Table 4.F-3, page 4.F-7). Another historic building, San Francisco Fire Department Engine Co. No. 30, is also located nearby, approximately 250 feet south of the anticipated pile-driving activities.

PIER 48 PILE DRIVING

As discussed in Chapter 2, *Project Description*, pile driving would be required for the seismic upgrade and structural rehabilitation of the aprons around Pier 48 as well as for the buildings and streets at Seawall Lot 337. The Pier 48 seismic work requires 106 new piles located below a new heavily reinforced concrete apron. As part of the seismic work, approximately 675 existing 24-inch round creosote-treated wood piles would be extracted with a vibratory extractor to make way for the new piles. The new pile scope includes both precast concrete and cylindrical steel-cased piles. Approximately 62 precast concrete piles would be installed. These are anticipated to be 30 feet in length and either 18 or 24 inches square. Their installation would require approximately 100 blows per pile and approximately three to four piles per day are expected to be installed over the course of about two months.

Approximately 44 steel-cased, concrete-filled piles would also be installed. These are anticipated to be approximately 120 feet in length, either 4 feet or 6 feet in diameter, and would not require impact pile driving as the steel casings are installed with a vibratory hammer. After the casings are installed, each pile would be drilled to remove soil, and the soil replaced with reinforced concrete. This scope would require about 12 months to complete, with an average one to two piles being completed per day.

SEAWALL LOT 337 PILE DRIVING

The buildings and streets at Seawall Lot 337 would require pile driving. For the buildings, steel H-piles, an average range of 175 to 230 feet in length, would be installed with a pile driver. In total, for all of the proposed buildings on Seawall Lot 337, approximately 3,880 piles would be required. For the streets, steel H-piles measuring approximately 175 feet in length would be installed with a pile driver. Approximately 500 total piles would be needed to support the streets. Steel H-piles would also be installed to support the Promenade and boardwalk at China Basin Park. It is assumed that approximately 200 piles with a length of 175 feet would be required in this area. During the early phases of the construction periods, an average of six to 10 piles would be installed per day.

Other equipment used during project construction, such as jackhammers, can also result in ground-borne vibration but to a lesser extent than pile driving (vibration levels at 50 feet for a pile driver and jackhammer are 0.26 in/sec PPV and 0.012 in/sec PPV, respectively).

Ground-borne vibration rarely causes damage to modern buildings. Potential damage to extremely fragile historic buildings could occur at 0.08 in/sec PPV, damage to fragile buildings could occur at 0.1 in/sec PPV, and damage to some historic and old buildings could occur at 0.25 in/sec PPV (see Table 4.F-3, page 4.F-7). The adjacent Pier 50 office building, which would be located more than 100 feet away from pile-driving activities, is considered a potentially historic building; the damage threshold for this building would be 0.25 in/sec PPV. Note that another historic building, San Francisco Fire Department Engine Co. No. 30, is also located nearby, approximately 250 feet south of the anticipated pile-driving activities. Worst-case vibration levels at a distance of 100 feet (at the Pier 50 office building) from pile driving would be approximately 0.19 in/sec PPV, which is less than the damage threshold of 0.25 in/sec PPV for old or historic buildings. At greater distances, including at the San Francisco Fire Department Building located 250 feet away, vibration levels would be even lower. Therefore, vibration associated with project construction is not predicted to result in impacts on surrounding buildings.

As shown in Table 4.F-2 (page 4.F-6), the in/sec PPV values at 50 feet for a pile driver and jackhammer are 0.2595 and 0.0124 in/sec PPV, respectively. Given the data in Table 4.F-4 (page 4.F-7), the PPV value (in/sec) for a pile driver at a distance of 50 feet would be considered more than strongly perceptible but less than severe. In addition, the operation of heavy-duty,

nonimpact construction equipment could also generate localized ground-borne vibration and noise at buildings adjacent to the construction site. The PPV (in/sec) values at 50 feet for some of the nonimpact equipment required for project construction would be 0.0315, 0.0269, and 0.0011 in/sec PPV, respectively, for a large bulldozer, loader truck, and a small bulldozer. For example, the ground vibration levels that could be generated by a large bulldozer and a loaded truck would be between Caltrans' annoyance-potential characterizations of "barely perceptible" and "distinctly perceptible" (see Table 4.F-4, page 4.F-7). Note that a vibration level in excess of the "strongly perceptible" (0.10 in/sec PPV) level is considered to be a significant impact for the purposes of this analysis.

There are several offsite industrial and nonresidential land uses directly east and south of the project site (such as the Public Safety Building south of Mission Rock Street and uses at the Pier 50 office building). Such land uses are not typically considered to be sensitive to ground-borne vibration; thus, impacts on these land uses would be less than significant. The nearest existing offsite land uses that could be considered sensitive to ground vibration are located approximately 100 feet west of the project site (i.e., Mission Bay Block 1 residential uses located along Third and Fourth Streets between Channel and Long Bridge Streets). At this distance, ground vibration from vibratory pile driving, jackhammering, and nonimpact construction activities is predicted to be less than 0.10 in/sec PPV (i.e., less than strongly perceptible.) Vibration from impact pile driving, however, would exceed the 0.10 in/sec strongly perceptible threshold at 100 feet, as shown in Table 4.F-2 (page 4.F-6).

A distance of 100 feet would be a reasonable worst-case scenario because this assumes that pile driving would occur on the boundary of the project site. Pile driving would occur throughout the project site, including near the project boundary. Approximately 4,600 total piles for the buildings, pile-supported streets, and Pier 48 would be installed as part of project construction. Although pile driving could occur at the boundary of the project site, pile driving near the boundary would occur only for a short period of time compared with the total pile-driving period for the project; most of the time, it would be occurring more than 100 feet from Mission Bay Block 1. Nevertheless, because pile driving could occur as close as 100 feet from nearby residences, it could result in vibration that would exceed the 0.10 in/sec "strongly perceptible" threshold at the closest residences. Pile driving would be less than strongly perceptible (approximately 0.037 in/sec PPV and therefore less than significant) at the next-nearest sensitive land use, the residences on the western side of Mission Bay Block 1 (300 feet west of the project site). However, because vibration from pile driving would be greater than "strongly perceptible" at some sensitive receptors, vibration impacts from pile driving on the project site would be significant.

MITIGATION MEASURE. Implementation of Mitigation Measure M-NOI-3.1, Pile-Driving Control Measures – Annoyance, would reduce potential vibration impacts on residences of the Mission Bay Block 1 residences by requiring the use of "quiet" pile-driving technology and limiting pile

driving to areas where the least disturbance of existing sensitive land uses would occur. However, pile driving is expected to occur close to the project boundary and Mitigation Measure M-NOI-3.1 may not be feasible at all times. The use of "quiet" pile-driving technology may not be possible because of site-specific soil conditions or specific technical or structural limitations at the project site. Specifically, pile driving would occur along Third Street and Mission Rock Street; the project boundary on Third Street is approximately 100 feet from the residential uses at Mission Bay Block 1. Thus, absent the use of "quiet" pile-driving technology, vibration from pile driving at these residences would be "strongly perceptible" and significant. No other feasible mitigation actions are available to further reduce vibration impacts on these sensitive receptors from pile driving. Therefore, this impact is ***significant and unavoidable with mitigation***.

M-NOI-3.1: *Pile-Driving Control Measures – Annoyance.* To reduce impacts associated with pile driving, a set of site-specific vibration attenuation measures shall be implemented under the supervision of a qualified acoustical consultant during the project construction period. These attenuation measures shall include as feasible, in consideration of technical and structural requirements and conditions, the following control strategy, as well as any other effective strategies to the extent necessary to achieve a PPV vibration level at neighboring properties of less than the strongly perceptible level of 0.10 in/sec.

The project sponsor shall require the construction contractor to limit pile-driving activity so that the PPV vibration level at neighboring uses is less than 0.10 in/sec to the extent it is practical and necessary and, to the extent it is practical, implement "quiet" pile-driving technology, such as predrilling piles, using sonic pile drivers, or using more than one pile driver to shorten the total duration of pile driving.

CONSTRUCTION VIBRATION IMPACTS ON ONSITE RECEPTORS

Impact pile driving would occur in proximity to Pier 48 and have the potential to result in vibration-related damage. Because Pier 48 fits in the Caltrans vibration building category of "Historic and Some Old Buildings" (refer to Table 4.F-3, page 4.F-7), a damage potential threshold of 0.25 in/sec PPV has been used in this analysis, based on the Caltrans criteria shown in Table 4.F-3 (page 4.F-7). Vibration in excess of this 0.25 in/sec PPV threshold could occur if pile driving were to occur within about 85 feet of Pier 48. Because pile driving would need to occur close to the existing building structure at distance less than 85 feet, this impact could be significant. However, the in-water pile driving would be conducted in accordance with the Port of San Francisco *Port-wide Maintenance Manual*[41] and employ a vibratory hammer to the greatest

[41] Port of San Francisco. 2016. *Port-wide Maintenance Manual*. April.

extent possible to minimize hydroacoustic impacts. When use of an impact hammer is necessary to finish pile driving and achieve the required final depth, the impact hammer would be equipped with a 12-inch-thick wooden block for cushioning and employ a "soft start" technique.[42]

It is the Port of San Francisco's experience that in-water pile driving, as proposed at the Pier 48 aprons, consistent with the Port's maintenance procedures, has not resulted in irreparable structural damage to piers or structures from vibration. The Port has confirmed that the proposed pile replacement associated with Pier 48 would be consistent with the protocols and plans associated with other in-water pier replacement projects that the Port has performed along its piers where the buildings had similar structural characteristics.[43]

With regard to potential vibration-related annoyance, new commercial uses and residences constructed as part of the proposed project could be occupied while construction is still occurring at the project site. These new commercial uses and residences would be located closer to construction activities than existing commercial uses and residences. Because of the length of the construction schedule, it is possible that there could be occupied businesses and residences on the project site while pile-driving or other equipment could be operating in the vicinity. Pile driving would most likely occur within 175 feet of new commercial uses and residences on the project site, and vibration would be strongly perceptible. Thus, pile driving could result in ground vibration that could disturb new commercial uses and residences, and this impact could be significant.

MITIGATION MEASURE. Implementation of Mitigation Measure M-NOI-3.1, Pile-Driving Control Measures – Annoyance, described previously, proposed for the vibration impacts on offsite receptors, would partially mitigate vibration impacts on new onsite residential and commercial uses. However, because the project site is a single confined area, pile driving could be necessary within 175 feet of new occupied commercial uses and residences. Further, because pile driving may need to occur within 100 feet of Pier 48, including not just the in-water pile-driving that as explained above would be subject to the Port's standard procedures for such in-water work, but also pile-driving associated with Seawall 337 and surrounding street areas, the potential exists for vibration-related damage to occur at this historic building. Implementation of Mitigation Measure M-NOI-3.2, Pile-Driving Vibration Control Measures – Damage, described below, would reduce potential damage-related vibration impacts. Given the measure's requirement for monitoring to ensure that vibration at potentially affected onsite buildings (Pier 48) would be limited to levels that have been recommended by an expert building evaluation team, building

[42] Port of San Francisco. 2017. Memo to Erin Efner from Joe Roger, senior structural engineer. Subject: Pier 48 Vibration Resulting from Pile Replacement Authority. March 24.

[43] Port of San Francisco. 2017. Memo to Erin Efner from Joe Roger, senior structural engineer. Subject: Pier 48 Vibration Resulting from Pile Replacement Authority. March 24.

damage would not be expected to occur. The impact related to potential vibration-related damage would be reduced to ***less-than-significant*** levels with mitigation. However, even with implementation of Mitigation Measures M-NOI-3.1, Pile Driving Control Measures – Annoyance, and M-NOI-3.2, Pile Driving Vibration Control Measures, vibration impacts related to annoyance at onsite uses would be ***significant and unavoidable***.

M-NOI-3.2: Pile-Driving Vibration Control Measures – Damage. To reduce the potential for damage to Pier 48, the following measures shall be implemented:

- The Port of San Francisco shall be notified in writing prior to construction activity that construction may occur within 100 feet of the Pier 48 buildings.
- The project sponsor shall retain a structural engineer, an architectural historian, and a licensed historical architect (hereafter referred to as the building evaluation team) to evaluate potentially affected buildings and determine their susceptibility to damage. The structural engineer shall evaluate the building structure. The architectural historian and licensed historical architect shall evaluate architectural elements. This building evaluation team shall then establish building-specific vibration thresholds that will (a) identify the level of vibration the affected historic buildings will tolerate so as to preclude structural damage to the building of a nature that would result in material damage to any historic features of the buildings, and (b) identify the level of vibration at which cosmetic damage may begin to occur to buildings.
- The building evaluation team shall inventory and document existing cracks in paint, plaster, concrete, and other building elements.
- The building evaluation team shall develop a ground-borne vibration monitoring plan that will include monitoring vibration at the buildings of concern to determine if the established thresholds are exceeded.
- The project sponsor shall retain a qualified acoustical consultant or engineering firm to implement the vibration monitoring plan at Pier 48. As part of the monitoring plan, the consultant shall conduct regular periodic inspections for cosmetic damage to each building within 160 feet of planned ground-disturbing activity on the project site.
- Should vibration levels be observed in excess of the cosmetic damage threshold or cosmetic damage be observed below that level, the driving of piles within 100 feet of the Pier 48 structure (or within the impact distance determined by the study of building-specific vibration thresholds, per second bullet above, whichever distance is shorter) shall be halted until measures are implemented to prevent cosmetic damage to the extent feasible. These measures include use

of alternative construction techniques, including, but not limited to, use of pre-drilled piles if soil conditions allow, use of smaller, lighter equipment, using vibratory hammers in place of impact hammers, and using pile cushioning or equipping the impact hammer with wooden cushion blocks to increase the period of time over which the energy from the driver is imparted to the pile**.** Should cosmetic damage to a building occur as a result of ground-disturbing activity on the site, notwithstanding the use of alternative construction techniques, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site.

- Should vibration levels be observed that reach the threshold designed to protect historic buildings from material damage to historic features, pile-driving within impact distances of the Pier 48 building, as determined by the building evaluation team, shall be halted and a structural bracing program or other appropriate protective measures for the potentially affected buildings shall be designed by the building evaluation team and implemented by the project sponsor. The structural bracing program or other protective measures shall be designed to prevent damage to the potentially affected buildings that could materially impair their historic resource status consistent with CEQA Guidelines Section 15064.5(b)(2). In addition, the structural bracing program shall be consistent with the proposed rehabilitation of the Pier 48 buildings and meet the Secretary of the Interior's Standards for Rehabilitation.
- Following completion of construction, the project sponsor shall conduct a second inspection to inventory changes in existing cracks and new cracks or damage, if any, that occurred as a result of pile driving. If new damage is found, then the project sponsor shall promptly arrange to have the damage repaired in accordance with recommendations made by the building evaluation team.

CUMULATIVE IMPACTS

The geographic scope of analysis for cumulative noise and vibration construction impacts and stationary noise sources encompasses reasonably foreseeable projects within approximately 900 feet of the project site. Beyond 900 feet, the contributions of noise from other projects would be greatly attenuated through both distance and intervening structures, and their contribution would be expected to be minimal. For cumulative vehicular noise impacts, cumulative noise increases would result primarily from increased traffic on the local roadway network. Cumulative plus-project traffic data, which include existing and future developments as well as other current projects, probable future projects, and projected future growth within the city through 2040, were used to estimate the cumulative operational noise increases.

Impact C-NOI-1. Construction activities for the proposed project, in combination with other past, present, and reasonable future projects in the city, would result in a substantial temporary increase in noise or noise levels in excess of the applicable local standards. (Significant and Unavoidable with Mitigation)

With regard to cumulative construction noise impacts, the closest reasonably foreseeable projects in the vicinity of the project site are Mission Bay Blocks 3E, 4E, 7E, 7W, 9, and 9A (see Figure 4-1 in Chapter 4, *Environmental Setting and Impacts*).

As discussed for Impact NOI-1, the Noise Ordinance for construction limits noise from individual pieces of powered construction equipment to 80 dBA L_{max} at a distance of 100 feet, except for impact equipment (note that average or L_{eq} noise levels would be even lower). Noise from impact equipment is not limited by the Noise Ordinance as long as it is equipped with appropriate noise control features, as recommended by the manufacturers and approved by the Director of Public Works or the Director of Building Inspection. The construction equipment for other projects in the vicinity of the project site would be similar to the equipment proposed for construction of the project. Therefore, it is likely that no individual piece of nonimpact equipment associated with construction of the foreseeable projects would violate the Noise Ordinance. If nearby projects utilize impact equipment, it would need to be equipped with noise control features to be in compliance with the City's Noise Ordinance. Further, according to the City Noise Ordinance, construction activities are generally prohibited between the hours of 8:00 p.m. and 7:00 a.m.

As also discussed under Impact NOI-1, combined noise levels from the loudest pieces of equipment operating simultaneously during construction of the project could be as high as 88 dBA L_{eq} at offsite residential uses in Mission Bay. The City uses the FTA general assessment construction noise criterion (90 dBA daytime 1-hour L_{eq}) to assess potential impacts for combined construction noise. Project construction noise could result in a noise level of 88 dBA L_{eq} at offsite uses, and the simultaneous construction of other projects in the vicinity could combine with this already high noise level to result in cumulative construction noise levels greater than 90 dBA L_{eq} (1 hour).

Because combined construction noise levels from project construction at the nearest sensitive land use (Channel Mission Bay Apartments) could be up to 88 dBA L_{eq} and the ambient noise level near the project site was conservatively estimated to be approximately 69 dBA L_{eq}, a substantial temporary increase in noise could occur. Comparing the modeled combined construction noise level of approximately 88 dBA L_{eq} at 100 feet from construction activity to the ambient noise level of 69 dBA L_{eq}, project construction could result in noise levels that would be 19 to 25 dB greater than the existing ambient noise level.

Construction activity associated with other projects located near the proposed project would result in similar noise levels and combine with project construction noise to result in even greater overall noise levels. Because construction noise from the project would exceed the

ambient noise level at onsite residences by more than 10 dB, it can be assumed that the combined noise level from all construction projects in the area would also result in noise levels of more than 10 dB above ambient conditions. Therefore, the cumulative construction noise impact related to a substantial temporary increase in noise could be significant. Because project construction would result in noise levels of more than 10 dB over ambient conditions, the project would make a cumulatively considerable contribution to this cumulative impact (substantial temporary increase in noise). Further, although construction of the development projects would generally comply with the City Noise Ordinance (e.g., abiding by hour limitations, using necessary control measures on impact equipment, ensuring no piece of equipment results in noise in excess of 80 dBA L_{eq} at a distance of 100 feet), combined noise from project construction and other adjacent projects may result in overall noise levels in excess of 90 dBA L_{eq} at sensitive receptors. As such, cumulative impacts from construction noise could be significant, and the project's contribution to this potential impact would be considered cumulatively considerable.

Although Mitigation Measure M-NOI-1, *Prepare and Implement a Construction Noise Control Plan to Reduce Construction Noise at Noise-Sensitive Land Uses*, described above under Impact NOI-1, would reduce construction noise levels as well as the severity of construction noise impacts on sensitive receptors, because of the project's proximity to offsite receptors and adjacent future construction projects, it would not be possible to guarantee that the cumulative noise level at nearby sensitive receptors would be less than 90 dBA L_{eq}. It would also not be possible to reduce the level of noise from construction activity compared with the ambient noise level. Therefore, even with incorporation of Mitigation Measure M-NOI-1, which would reduce the severity of the project construction noise impact, cumulative construction noise impacts would be ***significant and unavoidable with mitigation***.

Impact C-NOI-2. Construction activities associated with project-related development, in combination with other past, present, and reasonable future projects in the city, would expose sensitive receptors to excessive ground-borne vibration related to annoyance and could result in similar impacts related to damage to buildings. (Significant and Unavoidable with Mitigation for Annoyance)

As discussed above for Impact NOI-3, ground-borne vibration generated by traffic traveling on roadways is usually imperceptible at adjacent land uses (and far below the "distinctly perceptible" vibration level, which is often considered as the vibration annoyance threshold). Thus, there would be no cumulative vibration impacts related to vehicle traffic resulting from foreseeable projects.

Cumulative effects related to construction vibration could occur if construction activities for other projects in proximity to the project site involve impact equipment (e.g., pile drivers, impact hammers/hoe rams, jackhammers). Although vibration effects are highly localized, involving discrete single events such as pile strikes, several parcels immediately adjacent to the

project site (e.g., east of the project site [Mission Bay Block 1] and south of the project site [Blocks 9 and 9A]) could undergo construction activities that would involve pile driving. Given the project's overall construction schedule (with construction activities lasting between approximately 6 and 10 years [or more]), it is possible that the construction, including pile driving, of reasonably foreseeable adjacent projects could occur simultaneously with the proposed project. Cumulative impacts could therefore be significant.

As discussed above, the proposed project would result in significant and unavoidable impacts related to vibration annoyance because pile driving would result in vibration levels that would be in excess of the "strongly perceptible" threshold at nearby sensitive receptors. Implementation of Mitigation Measure M-NOI-3.1, Pile-Driving Control Measure – Annoyance, would help to reduce the severity of this significant impact; however, it may not reduce vibration to less than strongly perceptible (0.10 in/sec PPV) and, thus, less than significant levels. Because it is possible that the construction of reasonably foreseeable adjacent projects could occur simultaneously with the proposed project, cumulative vibration impacts related to annoyance would be significant. Because no other feasible mitigation actions are available to further reduce vibration annoyance from pile driving at nearby sensitive receptors, cumulative vibration impacts related to annoyance would be significant, and the proposed project's contribution to that impact would be cumulatively considerable.

As discussed previously, vibration-related damage impacts from project construction would be less than significant for offsite buildings and less than significant for onsite buildings (Pier 48) with implementation of Mitigation Measure M-NOI-3.2, Pile-Driving Vibration Control Measures – Damage. Although construction activities in the area could combine (especially if pile driving were to occur close by) and result in cumulative vibration effects (and possibly associated vibration-related building damage), the proposed project's contribution to this cumulative impact would be less than significant with implementation of Mitigation Measure M-NOI-3.2, described previously. As such, the project's contribution to this potential cumulative impact related to building damage is considered to be less than significant with mitigation. However, as described above, implementation of Mitigation Measure M-NOI-3.1, Pile-Driving Control Measure – Annoyance, would not reduce vibration to less than strongly perceptible levels. Because no other feasible mitigation actions are available to further reduce vibration annoyance from pile driving at nearby sensitive receptors, cumulative vibration impacts related to annoyance would be significant, and the proposed project's contribution to that impact would be cumulatively considerable. The cumulative vibration impact related to annoyance as well as the project's contribution to this impact is considered to be ***significant and unavoidable with mitigation.***

Impact C-NOI-3. Operation of the proposed project, in combination with other past, present, and reasonable future projects in the city, would result in the exposure of persons to noise in excess of the applicable local standards or a substantial permanent ambient noise level increase in the project vicinity. (Significant and Unavoidable)

STATIONARY NOISE

Implementation of other development projects would have the potential to increase ambient noise by creating new operational noise sources (such as HVAC equipment, emergency generators, etc.). Operational noise impacts from stationary sources associated with other development could combine with project noise sources to generate noise in excess of ambient levels at nearby noise-sensitive land uses. However, as described in Chapter 2, *Project Description*, the project would comply with the City Noise Ordinance (specifically Sections 2909[a], [b], and [d]) and Title 24 to ensure that stationary noise sources would not generate noise in excess of allowable levels at adjacent noise-sensitive land uses and onsite noise-sensitive land uses. This would be done by incorporating noise attenuation features, such as enclosures or barriers around HVAC equipment and emergency generators (and other noise-generating mechanical equipment), to reduce noise to allowable levels. Considering the proximity of Blocks 3E, 4E, 7E, 7W, 9, and 9A to the project site, noise in the area would be expected to increase overall from project development as well as cumulative development in the area. Operation of the project, along with other development projects, could result in a significant cumulative impact. However, through implementation of Mitigation Measure M-NOI-2.2, as well as compliance with the Noise Ordinance and Title 24, the project's contribution would not be cumulatively considerable. This impact is considered ***less than significant.***

TRAFFIC NOISE

Cumulative growth in the city could lead to increased noise levels from vehicular traffic. A cumulative substantial permanent increase in noise would occur if a greater than 3 dB increase from existing to future cumulative (2040 plus-project) noise levels were to occur in areas with resultant noise levels in excess of the applicable land use compatibility standard or if a greater than 5 dB increase were to occur anywhere (i.e., where the standard is not exceeded). If a cumulative traffic noise impact is anticipated along a given roadway segment, then the proposed project's contribution to that impact must be assessed. The proposed project would result in a cumulatively considerable contribution to a cumulative traffic noise impact if project-added traffic would result in an increase of more than 3 dB in areas where noise is in excess of the applicable land use compatibility standard or 5 dB in any area.

The 15 segments shown in Table 4.F-16, page 4.F-68, were modeled to have an increase of 3 dB from existing conditions to cumulative plus-project conditions in areas where the resultant (2040 plus-project) noise level exceeds the applicable compatibility criteria or an increase of 5 dB where the land use compatibility criteria are not exceeded (refer to Appendix 5 for more details).

Cumulative impacts related to a substantial permanent increase in noise along these 15 segments would be significant.

As shown in Table 4.F-16, page 4.F-68, the project would make a cumulatively considerable contribution to the cumulative substantial permanent increase in noise along one roadway segment (i.e., where the project would increase noise levels by 3 dB, with resultant noise in excess of the applicable criteria, or by 5 dB or more in any area compared to cumulative without-project conditions). The project would not make a cumulatively considerable contribution to the other 14 segments with potential cumulative impacts related to a substantial permanent increase in noise. However, along the aforementioned roadway segment, the project contribution to the cumulative impact could be significant. Refer to Appendix 5 for the full results of the cumulative impact assessment.

Although potential mitigation measures, such as the use of sound walls, were considered to reduce the project's cumulatively considerable contribution to the cumulative substantial permanent increase in noise along one roadway segment, it was determined that they would not be feasible in this dense urban area, with residential buildings located close to roadways. In addition, Mitigation Measure M-AQ-2.3 requires preparation of a transportation demand management plan, with a goal of reducing the number of one-way vehicle trips by 20 percent. This mitigation measure could reduce the amount of traffic on roadway segments that would experience a significant traffic noise increase, but it would be speculative to quantify the precise number of vehicle trips (and hence vehicle-related noise) eliminated along any given segment. Therefore, the cumulative traffic noise impact and the project's contribution to this impact would be ***significant and unavoidable***.

TABLE 4.F-16. ROADWAY SEGMENTS WITH POTENTIAL FOR A CUMULATIVE SUBSTANTIAL PERMANENT INCREASE (RELATED TO TRAFFIC) NOISE IMPACT

Roadway	Segment	Existing Noise Level (dBA L_{dn})	2040 without-Project L_{dn} at 50-foot Distance (dBA L_{dn})	2040 Plus-Project L_{dn} at 50-foot Distance (dBA L_{dn})	Difference between Existing and 2040 Plus Project (dB)	Cumulative Impact? (increase greater than allowable)[1]	Difference between 2040 without Project and 2040 Plus Project (dB)	Cumulatively Considerable Project Contribution to Cumulative Impact?[2]
16th Street	Third Street to Owens Street	61.5	64.5	65	3.4	Yes	0.4	No
Channel Street	East of Third Street	52.5	54.9	58.7	6.2	Yes	3.8	No
Channel Street	Third Street to Fourth Street	51.7	54.8	56.8	5.1	Yes	2.0	No
Fourth Street	King Street to Fourth Street Bridge	57	60	62.3	5.3	Yes	2.2	No
Fourth Street	Channel Street to Mission Rock Street	53.8	58.3	60.7	6.9	Yes	2.4	No
Fourth Street	Fourth Street Bridge to Channel Street	55.5	59.4	61.9	6.4	Yes	2.5	No
Fourth Street	Townsend Street to King Street	59.8	62	62.8	3.1	Yes	0.8	No
I-280 NB Off-Ramp	South of Mariposa Street	62.1	65.3	65.6	3.5	Yes	0.4	No
Mariposa Street	I-280 NB Off-Ramp to Minnesota Street	60.2	63.2	63.7	3.5	Yes	0.5	No
Mariposa Street	Third Street to Illinois Street	56.2	60.2	60.7	4.4	Yes	0.5	No
Mariposa Street	I-280 SB On-Ramp to I-280 NB Off-Ramp	50.8	60.7	61.4	10.6	Yes	0.7	No
Mariposa Street	Minnesota Street to Third Street	59.2	62.1	62.7	3.5	Yes	0.6	No
Mission Rock Street	Terry A. Francois Boulevard to Third Street	49.6	54.6	62	12.4	Yes	**7.4**	**Yes**
Mission Rock Street	Third Street to Fourth Street	47.8	54.4	58.9	11.1	Yes	4.5	No
Third Street	Terry A. Francois Boulevard to Channel Street	60.7	62.5	63.9	3.2	Yes	1.5	No

Notes:

[1] Cumulative impact occurs when there is a 3 dBA increase where resultant cumulative plus-project noise levels are greater than 60 dBA L_{dn} or a 5 dBA increase where resultant cumulative plus-project noise levels are less than 60 dBA L_{dn}.

[2] Cumulatively considerable contribution to a cumulative impact occurs if the project contributes a 3 dBA increase to a cumulative impact where resultant cumulative plus-project noise levels are greater than 60 dBA L_{dn} or a 5 dBA increase where resultant cumulative plus-project noise levels are less than 60 dBA L_{dn}.

NB = northbound; SB = southbound

4.G AIR QUALITY

This section evaluates the potential air quality impacts that would result from short-term construction and long-term operation of the proposed project. It identifies both project-level and cumulative environmental impacts as well as feasible mitigation measures to reduce or avoid the identified impacts. NOP comments received on air quality relate to pollution associated with the proposed industrial/manufacturing use at Pier 48 and increased traffic. These issues are addressed in the impact analysis presented below.

ENVIRONMENTAL SETTING

REGIONAL AIR QUALITY

California is divided into 15 air basins that correspond to the geographic features that create their distinctive regional climates. The proposed project is located within the San Francisco Bay Area Air Basin (SFBAAB), which contains all of Napa, Contra Costa, Alameda, Santa Clara, San Mateo, San Francisco, and Marin Counties as well as portions of Sonoma and Solano Counties. Climate in the SFBAAB is affected primarily by its latitude, topography, marine air flow, and the basin's proximity to the San Francisco Bay.

The proposed project would be located in the Peninsula subregion of the SFBAAB. The Peninsula subregion extends from northwest of San José to the Golden Gate Bridge. The Santa Cruz Mountains run along the center of the peninsula, with elevations above 2,000 feet at the southern end but decreasing to 500 feet in South San Francisco. Coastal towns experience a high incidence of cool, foggy weather in the summer. San Francisco lies at the northern end of the peninsula. Because most of San Francisco's topography is below 200 feet, marine air is able to flow easily across most of the city, making its climate cool and windy. Cities in the southeastern peninsula experience warmer temperatures and fewer foggy days because the marine layer is blocked by the ridgeline to the west.

The regional climate within the SFBAAB is considered semi-arid and characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate onshore breezes in the daytime, and moderate humidity. A wide range of meteorological and emissions-related sources, such as the dense population centers, heavy vehicular traffic, and industrial activity, influence air quality in the SFBAAB.

Air pollutant emissions within the SFBAAB are generated from stationary, mobile, and natural sources. Stationary sources can be divided into two major subcategories: point and area sources. *Point sources* occur at an identified location and are usually associated with manufacturing and industry. Examples are combustion equipment and boilers that produce electricity or generate

heat. *Area sources* consist of many smaller point sources that are widely distributed. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hair spray. Construction activities that create fugitive dust (e.g., excavation and grading) also contribute to area-source emissions. Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. These are classified as either on-road or off-road sources. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled from the ground surface and suspended in the air during high wind events.

PROJECT VICINITY

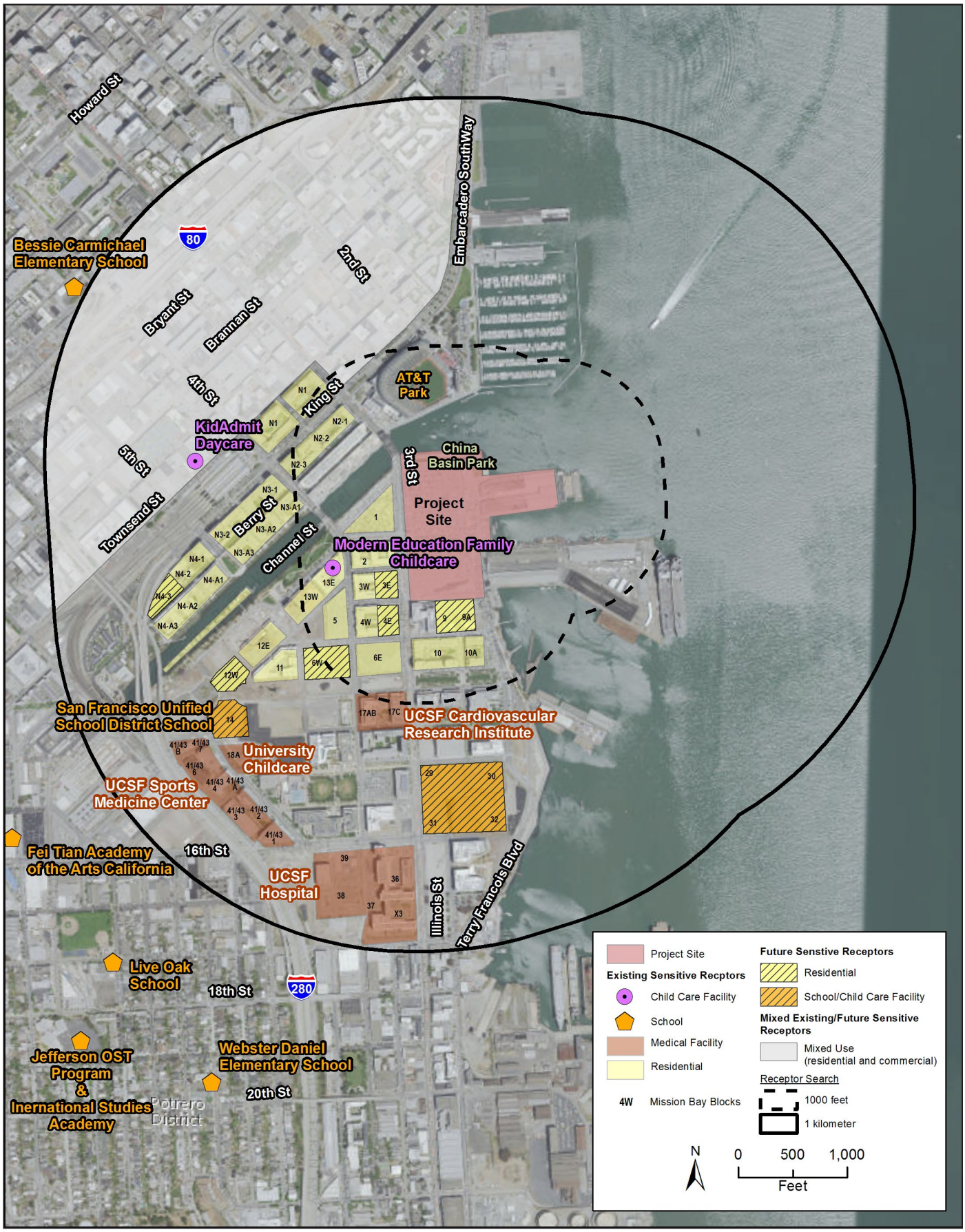
The primary sources of air pollutants in the project vicinity are locomotive emissions from Caltrain; vehicle emissions from major roadways, including Interstate 280, 3rd Street, and King Street; and permitted stationary sources. Land uses surrounding the project site include residential, hospital, school/university, office, hotel, retail, parking, and public facility uses that typify downtown San Francisco and its immediate surroundings. The closest offsite sensitive receptors are those residential[1] land uses located immediately adjacent to the proposed project boundaries (see the discussion of sensitive receptor locations below and Figure 4.G-1 on the following page).

AMBIENT AIR QUALITY

CRITERIA AIR POLLUTANTS

As required by the 1970 Federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) initially identified six criteria air pollutants that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. The EPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public health–based and welfare-based criteria for setting permissible levels. Ozone, particulate matter, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six criteria air pollutants originally identified by the EPA. Since adoption

[1] Although land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are generally considered as sensitive receptors, this analysis evaluates impacts on residential sensitive receptors. This is because the residential exposure assumptions (such as exposure duration, breathing rates, and age sensitivity factors) are more conservative than those for other sensitive receptor types. Therefore, this approach is conservative with respect to health risks.



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Figure 4.G-1
Location of the Nearest Existing and Potential Future Sensitive Receptors to the Project Area

of act, subsets of particulate matter have been identified for which permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM10) and particulate matter of 2.5 microns in diameter or less (PM2.5).

The federal and state governments have established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) (see Table 4.G-3, page 4.G-19) for six criteria pollutants: ozone, lead, CO, NO_2, SO_2, and particulate matter, consisting of PM10 and PM2.5. Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and lead are considered local pollutants because they tend to accumulate in the air locally. PM10 and PM2.5 are both regional and local pollutants.

The region's air quality monitoring network, operated by the Bay Area Air Quality Management District (BAAQMD) and the California Air Resources Board (ARB), provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. A number of these ambient air quality monitoring stations monitor progress toward attainment of the NAAQS and the CAAQS (see Table 4.G-3, page 4.G-19). The BAAQMD maintains these stations. The nearest monitoring station to the project site is the San Francisco-Arkansas Street monitoring station, which is approximately 1 mile to the southwest. Table 4.G-1 on the following page presents a 6-year summary (2010–2015) of data collected from this station as well as the number of days that state and federal ambient air quality standards were exceeded.

The data presented in Table 4.G-1 indicate that neither the federal nor the state ambient air quality standards were exceeded between 2010 and 2015 (2016 data not yet available) for CO, NO_2, or ozone (see Table 4.G-3, page 4.G-19, for the standards). However, annual violations of the federal standard for PM2.5 were recorded at the station. In addition, the state standard for PM10 was exceeded in 2012.

The principal characteristics surrounding ozone (including nitrogen oxides [NO_X] and reactive organic gas [ROG]), CO, and particulate matter are discussed below.

Ozone, or smog, is a photochemical oxidant that is formed when ROG and NO_X (both by-products of the internal combustion engine) react with sunlight. Ozone poses a health threat to those who already suffer from respiratory diseases as well as healthy people. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and premature death. Ozone can also act as a corrosive, resulting in property damage, such as the degradation of rubber products.

TABLE 4.G-1. AMBIENT AIR QUALITY MONITORING DATA FOR SAN FRANCISCO-ARKANSAS STREET

	San Francisco-Arkansas Street					
Pollutant Standards	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Ozone (O_3)						
Maximum 1-hour concentration (ppm)	0.079	0.070	0.069	0.069	0.079	0.085
Maximum 8-hour concentration (ppm)	0.051	0.054	0.048	0.059	0.069	0.067
Number of days standard exceeded[a]						
CAAQS 1-hour (> 0.09 ppm)	0	0	0	0	0	0
CAAQS 8-hour (> 0.070 ppm)	0	0	0	0	0	0
NAAQS 8-hour (> 0.070 ppm)	0	0	0	0	0	0
Carbon Monoxide (CO)						
Maximum 8-hour concentration (ppm)	1.37	1.20	1.19	—	—	—
Maximum 1-hour concentration (ppm)	1.8	1.8	2.0	—	—	—
Number of days standard exceeded[a]				—	—	—
NAAQS 8-hour standard (≥ 9 ppm)	0	0	0	—	—	—
CAAQS 8-hour standard (≥ 9.0 ppm)	0	0	0	—	—	—
NAAQS 1-hour standard (≥ 35 ppm)	0	0	0	—	—	—
CAAQS 1-hour standard (≥ 20 ppm)	0	0	0	—	—	—
Nitrogen Dioxide (NO_2)						
State maximum 1-hour concentration (ppb)	92	93	124	72	83	70
State second-highest 1-hour concentration (ppb)	92	93	124	67	66	63
Annual average concentration (ppb)	13	14	12	13	12	12
Number of days standard exceeded						
CAAQS 1-hour standard (> 0.18 ppm)	0	0	0	0	0	0
Particulate Matter (PM10)[b]						
National[c] maximum 24-hour concentration (μg/m³)	38.6	43.7	48.2	41.9	34.5	44.7
National[c] second-highest 24-hour concentration (μg/m³)	36.6	35.6	46.6	40.0	28.1	38.2
State[d] maximum 24-hour concentration (μg/m³)	39.7	45.6	50.6	44.3	35.9	47.0
State[d] second-highest 24-hour concentration (μg/m³)	38.0	36.0	48.4	41.9	29.0	39.0
National annual average concentration (μg/m³)	19.3	18.8	16.9	9.7	8.6	9.8
State annual average concentration (μg/m³)[e]	—	19.5	17.5	—	16.8	—
Number of days standard exceeded[a]						
NAAQS 24-hour standard (> 150 μg/m³)[f]	0	0	0	0	0	0
CAAQS 24-hour standard (> 50 μg/m³)[f]	0	0	6	—	0	—

Pollutant Standards	San Francisco-Arkansas Street					
	2010	2011	2012	2013	2014	2015
Particulate Matter (PM2.5)						
National[c] maximum 24-hour concentration (μg/m³)	45.3	47.5	35.7	48.5	33.2	35.4
National[c] second-highest 24-hour concentration (μg/m³)	41.0	35.6	29.0	37.2	27.3	34.3
State[d] maximum 24-hour concentration (μg/m³)	45.3	47.5	35.7	48.5	33.2	35.4
State[d] second-highest 24-hour concentration (μg/m³)	41.0	35.6	29.0	37.2	27.3	34.3
National annual average concentration (μg/m³)	10.5	9.5	8.2	10.1	7.7	7.9
State annual average concentration (μg/m³)[e]	10.6	9.5	—	—	7.7	7.9
Number of days standard exceeded[a]						
NAAQS 24-hour standard (> 35 μg/m³)	3	2	1	2	0	0
Sulfur Dioxide (SO_2)						
No data available						

Sources:

1. California Air Resources Board. 2016. *iADAM Air Quality Data Statistics*. Available: http://www.arb.ca.gov/adam/index.html. Accessed: August 9, 2016.
2. U.S. Environmental Protection Agency. 2016. *Monitor Values Report.* Available: http://www.epa.gov/airdata/ad_rep_mon.html. Accessed: October 28, 2016.

Notes:

"—" means no data available.

a. An exceedance is not necessarily a violation.
b. National statistics are based on standard conditions data. In addition, national statistics are based on samplers, using federal reference or equivalent methods.
c. State statistics are based on local conditions data, except in the South Coast Air Basin where statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.
d. Measurements usually are collected every 6 days.
e. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
f. Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

Abbreviations:

ppm = parts per million.
NAAQS = National Ambient Air Quality Standards.
CAAQS = California Ambient Air Quality Standards.
μg/m³ = micrograms per cubic meter.
mg/m³ = milligrams per cubic meter.
> = greater than.
≥ = greater than or equal to.
NA = not applicable.
— = insufficient data available.

Reactive organic gases are made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but, rather, by reactions of ROG that form secondary pollutants such as ozone.

Nitrogen oxides serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas that forms from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown gas, formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Carbon monoxide is a colorless, odorless toxic gas that is produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Particulate matter consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Emissions of two forms of fine particulates are regulated by state and federal agencies (i.e., inhalable coarse particles [PM10] and inhalable fine particles [PM2.5]). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM10 and PM2.5 may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Although there are federal standards for air pollutants as well as state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at levels that are lower than the national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available action to reduce the sources of particulate matter exposure. According to ARB, reducing PM2.5 concentrations to the state and federal standards of 12 $\mu g/m^3$ in the San Francisco Bay Area would prevent between 200 and 1,300 premature deaths.[2]

[2] California Air Resources Board. 2008. *Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California*, Table 4c. Staff report. October 24.

HEALTH EFFECTS

As discussed above, all criteria pollutants are associated with some form of health risk (e.g., asthma, asphyxiation). Adverse health effects associated with criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). Moreover, ozone precursors (ROG and NO_x) affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region.

Increased emissions of ozone precursors (ROG and NO_x) generated by a project could increase photochemical reactions and the formation of tropospheric ozone, which, at certain concentrations, could lead to respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways. Several factors influence these health impacts, including ozone concentrations, the exposure duration, average volume of air breathed per minute, the length of intervals between short-term exposures, and the sensitivity of the person to the exposure.[3,4] The concentration of ground-level ozone is influenced by the volume of air available for dilution, the temperature, and the intensity of ultraviolet light. The worst-case conditions for ozone formation in the Bay Area occur in the summer or early fall on warm, windless sunny days.[5] Although these health effects are -associated with ozone, the impacts are a result of cumulative and regional ROG and NO_x emissions. Because of these numerous and interconnected factors, it is difficult to predict the magnitude of health effects from a project's exceedance of significance criteria for regional ROG emissions.

TOXIC AIR CONTAMINANTS

Individual projects may emit toxic air contaminants (TACs), a diverse group of air pollutants that are capable of resulting in chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. Human health effects associated with TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of TACs, with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

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3 The World Bank Group. 1999. *Pollution Prevention and Abatement Handbook 1998: Toward Cleaner Production,* pages 227–230. Available: http://www.ifc.org/wps/wcm/connect/dd7c9800488553e0b0b4f26a6515bb18/%20Handbook%20GroundLevel%20Ozone.pdf?MOD=AJPERES. Accessed: August 12, 2016.

4 U.S. Environmental Protection Agency. 2015. *Air Quality Guide for Ozone*. Available: https://www3.epa.gov/airnow/ozone/air-quality-guide_ozone_2015.pdf. Accessed: August 12, 2016.

5 Bay Area Air Quality Management District. 2016. *Pollutant Glossary*. Available: http://www.baaqmd.gov/about-air-quality/glossary. Accessed: August 12, 2016.

Although the NAAQS and CAAQS have been established for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, ARB has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity studied by the California Office of Environmental Health Hazard Assessment (OEHHA).

Air toxics are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, auto body shops, and combustion sources; mobile sources, such as motor vehicles, diesel trucks, ships, and trains; and area sources, such as farms, landfills, and construction sites. The adverse health effects of TACs can be carcinogenic (cancer causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders.

TACs are regulated by the BAAQMD, using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment (HRA) is an analysis in which human exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances to provide quantitative estimates of health risks.[6]

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as *sensitive receptors*. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 70 years. The latest guidance from OEHHA recommends a 30-year exposure duration for use as the basis for estimating cancer risk at the maximally impacted receptor (MIR) in all HRAs. Therefore, assessments of air pollutant exposure for residents typically result in the greatest adverse health outcomes of all population groups.

[6] 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 and estimates the increased risk of cancer as a result of exposure to one or more TACs.

Exposures to fine particulate matter (PM2.5) are strongly associated with mortality, respiratory diseases, lung development in children, and other endpoints, such as hospitalization for cardiopulmonary disease.[7] In addition to PM2.5, diesel particulate matter (DPM) is also of concern and is the primary TAC associated with the project. ARB identified DPM as a TAC in 1998, primarily based on evidence that demonstrated the cancer effects in humans.[8] Compared to other air toxics ARB has identified, DPM emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk.[9] OEHHA guidance indicates that PM10 should be used as a surrogate for DPM when evaluating health risks associated with DPM.[10]

TAC MONITORING

Both the BAAQMD and ARB operate TAC monitoring networks in the San Francisco Bay Area. These stations measure 10 to 15 TACs, depending on the monitoring station. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in the ambient air and therefore tend to be the primary contributors to community health risks.

The only monitoring site for TACs in San Francisco is the 16th and Arkansas Streets monitoring station. Table 4.G-2 on the following page presents the ambient concentrations of carcinogenic TACs, as measured at the 16th and Arkansas Streets monitoring station, and the estimated cancer risk from lifetime (70-year) exposure to these substances.[11]

The cancer risks associated with mean TAC concentrations at the 16th and Arkansas Streets monitoring station are similar to those for the Bay Area as a whole. Therefore, the estimated average lifetime cancer risk resulting from exposure to TAC concentrations at the 16th and Arkansas Streets monitoring station does not appear to be any greater than it is for the Bay Area.

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7 San Francisco Department of Public Health. 2008. *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*. May.

8 California Air Resources Board. 1998. *Fact Sheet.* The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. October.

9 California Air Resources Board. 1998. *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant*. Available: http://www.arb.ca.gov/regact/diesltac/diesltac.htm. Accessed: August 27, 2015.

10 Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February. Available: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed: August 11, 2015.

11 OEHHA recommends using the 70-year exposure duration for population-wide impacts, which is the basis for the cancer risk impacts in the table. This differs from the 30-year exposure duration for the MIR used to assess project-related cancer risks.

TABLE 4.G-2. CARCINOGENIC TOXIC AIR CONTAMINANTS—ANNUAL AVERAGE AMBIENT CONCENTRATIONS

Substance	Mean Concentration[a]	Cancer Risk per Million[b]
Gaseous TACs[c]		
Acetaldehyde	0.50	2
Benzene	0.195	18
1,3-Butadiene	0.038	14
Para-Dichlorobenzene	0.15	10
Carbon Tetrachloride	0.094	25
Ethylene Dibromide	0.006	3
Formaldehyde	1.28	9
Perchloroethylene	0.015	0.6
Methylene Chloride	0.127	0.4
Methyl Tertiary-Butyl Ether (MTBE)	0.26	0.2
Chloroform	0.030	0.8
Trichloroethylene	0.012	0.1
Particulate TACs[d]		
Chromium (Hexavalent)	0.078	12

Source:

California Air Resources Board. 2016. *Ambient Air Toxics Summary*. Available: http://www.arb.ca.gov/adam/toxics/sitesubstance.html. Accessed: August 9, 2016.

Notes:

a. All values represent the BAAQMD 2012 monitoring data from the 16th and Arkansas Streets monitoring station, except for acetaldehyde (2014), para-dichlorobenzene (2006), ethylene dibromide (1992), formaldehyde (2014), and MTBE (2003).

b. Cancer risks were estimated by applying published unit risk values to the measured concentration.

c. ppb = parts per billion.

d. ng/m^3 = nanograms per cubic meter.

SAN FRANCISCO MODELING OF AIR POLLUTION EXPOSURE ZONE

The City and County of San Francisco (City) partnered with the BAAQMD to identify the areas of San Francisco that are most adversely affected by the sources of TACs and conduct an assessment of air pollution and exposure from vehicles, stationary sources, and area sources within the city. For this assessment, the City conducted citywide dispersion modeling, using AERMOD, to assess emissions from the following primary sources: roadways, permitted stationary sources, port and maritime sources, and Caltrain. Emissions of PM10 (DPM is assumed to be equivalent to PM10), PM2.5, and total organic gas (TOG) were modeled on a 20-by 20-meter receptor grid that covered the entire city. This analysis resulted in a comprehensive assessment of existing cumulative exposures to air pollution throughout the city. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation* contains the methodology and technical documentation for the assessment.

The City identified areas with poor air quality as an Air Pollutant Exposure Zone (APEZ), based on modeling results that relied on three sets of criteria. First, the City delineated areas to be within the APEZ if they had pollutant levels that exceed the following health-protective criteria:

1. Cumulative PM2.5 concentrations greater than 10.0 micrograms per cubic meter ($\mu g/m^3$), and/or
2. Excess cancer risk greater than 100 per 1 million from the contribution of emissions from all modeled sources.

Second, the City designated areas to be in the APEZ if located in San Francisco ZIP codes with the worst quintile of Bay Area health vulnerability scores (i.e., ZIP codes 94102, 94103, 94105, 94124, and 94130), using the following more conservative criteria:

1. Cumulative PM2.5 concentrations greater than 9.0 $\mu g/m^3$, and/or
2. Excess cancer risk greater than 90 per 1 million from the contribution of emissions from all modeled sources.

Third, the City included in the APEZ all parcels within 500 feet of a major freeway, consistent with findings in ARB's *Air Quality and Land Use Handbook: A Community Health Perspective*. The ARB report suggests that air pollutant levels decrease substantially at about 500 feet from a freeway.

The localized health risk thresholds explained above are based on city-specific information and consultation with the BAAQMD. These thresholds are used both within the City's Clean Construction Ordinance and Article 38 of the San Francisco Health Code, which addresses toxic air contaminants and sensitive land use developments within the APEZ and is described further in the *Regulatory Framework* section.[12, 13]

The project site is not located within the APEZ, but certain portions of the APEZ are located in the study area (as shown in Figure 4.G-2 on the following page). As noted above, an additional health vulnerability layer, consisting of areas (by ZIP code) of the city in the worst quintile of Bay Area health vulnerability scores, was incorporated in the APEZ. However, neither the project site nor any of the sensitive receptors analyzed in the study area are located in any of the ZIP codes that were identified as a health vulnerability area.

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[12] BAAQMD staff members were also present and spoke in support at an October 6, 2014, public hearing, during which the ordinance was considered and recommended for approval by the San Francisco Board of Supervisors, Land Use and Economic Development Committee.

[13] City and County of San Francisco Department of Public Health. 2014. *Memorandum: 2014 Air Pollutant Exposure Zone Map*. April 9. Air, Noise, and Radiation Program.



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Seawall Lot 337 and Pier 48 Mixed-Use Project EIR
Case No. 2013.0208E

Figure 4.G-2
Location of Air Pollutant Exposure Zone

EXCESS CANCER RISK

The above-100-per-1-million-persons (100-excess-cancer-risk) criterion used by the City is based on U.S. Environmental Protection Agency (USEPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[14] As described by the BAAQMD, USEPA considers a cancer risk of 100 per 1 million 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,[15] USEPA 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 1 in 1 million and (2) limiting to no higher than approximately 1 in 10,000 [100 in 1 million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." The 100-per-1-million excess cancer cases are also consistent with the ambient cancer risk in the most pristine portions of the Bay Area, based on the BAAQMD regional modeling.[16]

FINE PARTICULATE MATTER

In April 2011, USEPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards* (Particulate Matter Policy Assessment). In this document, USEPA concludes that the then-current federal annual PM2.5 standard of 15 $\mu g/m^3$ should be revised to a level within the range of 11 to 13 $\mu g/m^3$, with evidence that strongly supported a standard within the range of 11 to 12 $\mu g/m^3$. The APEZ for San Francisco is based on the health-protective PM2.5 standard of 11 $\mu g/m^3$, as supported by USEPA's Particulate Matter Policy Assessment, although lowered to 10 $\mu g/m^3$ to account for the uncertainty in accurately predicting air pollutant concentrations with use of emissions modeling programs.

DIESEL PARTICULATE MATTER

In 1998, ARB identified DPM as a TAC, based primarily on evidence that demonstrates cancer effects in humans. Many of the hundreds of different gaseous and particulate components of exhaust from diesel engines are toxic. The primary sources of diesel emissions include mobile sources, such as trucks and buses.

Concentrations of DPM are highest near heavily traveled highways. In 2000, ARB estimated that the average cancer risk from exposure to DPM in the Bay Area, based on a population-weighted average ambient DPM concentration, is approximately 480 in 1 million. This is

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[14] Bay Area Air Quality Management District. 2009. Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance, page 67. October.

[15] 54 *Federal Register* 38044, September 14, 1989.

[16] Bay Area Air Quality Management District. 2009. Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance, page 67. October

much higher than the risk associated with any other toxic air pollutant that is routinely measured in the region. ARB determined that the statewide risk from DPM declined from 750 in 1 million in 1990 to 570 in 1 million in 1995. ARB estimated the average statewide cancer risk from DPM at 540 in 1 million in 2000.[17, 18]

In September 2000, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. Subsequent ARB 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.[19] By 2020, the regulation is anticipated to result in an 80 percent decrease in the statewide diesel health risk compared to 2000. Despite notable DPM emissions reductions and exposures, ARB recommends that proximity to DPM emissions sources be considered in the siting of new sensitive land uses. ARB notes that these recommendations are advisory and should not be interpreted as defined "buffer zones" and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality-of-life issues. ARB believes that, with careful evaluation of exposure and health risks and affirmative steps to reduce risk where necessary, infill development, mixed-use, higher-density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with regulations to protect the health of individuals at the neighborhood level.[20]

ROADWAY-RELATED POLLUTANTS

Roadway-related pollutants are produced by motor vehicles through tailpipe emissions, road dust, and brake and tire wear. Vehicle tailpipe emissions contain many TACs, including benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, naphthalene, and diesel exhaust. Engine exhaust from diesel, gasoline, and other combustion engines is a complex mixture of

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17 California Air Resources Board. 2009. *California Almanac of Emissions and Air Quality, 2009 Edition*. Table 5-44 and Figure 5-12. Available: http://www.arb.ca.gov/aqd/almanac/almanac09/chap509.htm. Accessed: December 2, 2016.

18 This calculated cancer risk value from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which 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. 2016. *Lifetime Risk of Developing or Dying From Cancer*. Last revised: March. Available: http://www.cancer.org/cancer/cancerbasics/lifetime-probability-of-developing-or-dying-from-cancer. Accessed: December 2, 2016.

19 Pollution Engineering. 2006. *New Clean Diesel Fuel Rules Start*. July. Available: http://www.gsweventcenter.com/Draft_SEIR_References/2006_0702_PollutionEngineering.pdf. Accessed: December 2, 2016.

20 California Air Resources Board. 2005. *Air Quality and Land Use Handbook*. April. Available: http://www.arb.ca.gov/ch/handbook.pdf. Accessed: January 30, 2015.

particles and gases with collective and individual toxicological characteristics. Health effects have been associated with proximity, or exposure, to vehicle-related pollutants collectively as a mixture, despite the fact that each individual pollutant in engine exhaust has a unique toxicological profile. Exposure to PM2.5 is strongly associated with mortality, respiratory diseases, lung development in children, and hospitalization for cardiopulmonary disease, among other results. People living in proximity to freeways or busy roadways have poorer health outcomes. Air pollution monitoring done alongside epidemiological studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and NO_2. Traffic-related studies have shown that an additional noncancer health risk, attributable to roadway proximity, occurs within 1,000 feet of a roadway and is strongest within 300 feet. As a result, ARB recommends that new sensitive land uses not be located within 500 feet of a freeway or urban road carrying 100,000 vehicles per day.

According to ARB, studies have shown an association between the proximity of sensitive land uses to freeways and a variety of respiratory symptoms, asthma exacerbation, and decreases in lung function in children. Siting sensitive uses in proximity to freeways increases both exposure to air pollution and the potential for adverse health effects.

NATURALLY OCCURRING ASBESTOS

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals. It has been mined for applications that require thermal insulation, chemical and thermal stability, and high tensile strength. It is also found in its natural state in rock or soil (known as naturally occurring asbestos or NOA). Mapping published by the U.S. Geological Survey and California Geological Survey indicates that the project site does not have any reported historic asbestos mines, historic asbestos prospects, asbestos-bearing talc deposits, fibrous amphiboles, or ultramafic rock outcrops.[21] Asbestos may have been used during construction of the existing onsite buildings, however.

SENSITIVE RECEPTORS

The following sensitive receptors are located within 1 mile of the project site boundary (the approximate linear distance, in feet, from the project site boundary to the receptor is listed in parenthesis, as identified using Google Earth). These receptors are identified in Figure 4.G-1, page 4.G-3.

[21] U.S. Geological Survey and California Geological Survey. 2011. *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California – Map*. Available: http://pubs.usgs.gov/of/2011/1188/pdf/Plate.pdf. Accessed: January 30, 2015.

Existing (Offsite) Sensitive Receptors

- Residences (250 feet to the west) – Mission Bay Block Nos. 2, 3W, 4W, 5, 11, 12E/W
- Residential apartments and condominiums (650 feet to the west) – Mission Bay Block Nos. N3A-1, N3A-2, N3A-3, N4A-1, N4A-2, N4A-3
- Residences (400 feet to the south) – Mission Bay Block Nos. 10, 10A
- Residential (500 feet to the southwest) – Mission Bay Block No. 7W.
- Modern Education Family Childcare (600 feet to the west) – Mission Bay Block No. 13E
- University of California San Francisco (UCSF) Cardiovascular Research Institute (900 feet to the south) – Mission Bay Block Nos. 17AB, 17C
- UCSF Sports Medicine Center (2,300 feet to the southwest) – Mission Bay Block Nos. 41/43
- University Childcare at Mission Bay (1,900 feet to the southwest) – Mission Bay Block No. 18A
- KidAdmit Daycare (1,900 feet to the northwest) – 350 Townsend Street, #323
- Residences and onsite daycare (400 feet to the northwest) – Mission Bay Block No. N2-2
- Family House (450 feet southwest) – Mission Bay Block No. 7E.
- UCSF Hospital (2,300 feet to the south)– Mission Bay Block Nos. 36, 37, 38, 39, X3
- Mercy housing/residential condos (600 feet and 880 feet west) – Mission Bay Block Nos. 13E/W
- Mixed-use (commercial/residential) (1,000 feet to the north and northwest)
- Bessie Carmichael Elementary School (3,200 feet to the northwest)
- Fei Tian Academy of the Arts California (4,200 feet to the southwest)
- Live Oak School (4,500 feet to the southwest)
- Webster Daniel Elementary School (4,900 feet to the southwest)
- Jefferson OST Program and International Studies Academy (5,000 feet to the southwest)
- Floating homes (1,500 feet to the west)

Proposed Onsite and Future Offsite Sensitive Receptors

- Residences and day care facilities associated with the proposed project (onsite)
- Residences not associated with the proposed project (100 feet to the south and 100 feet to the west) – Mission Bay Block Nos. 8, 9, 9A, 3E, 4E, 6E/W, 12W

- San Francisco Unified School District public school (1,800 feet to the southwest) – Mission Bay Block No. 14
- Daycare facility associated with the Alexandria/Uber Office Development (1,600 feet to the south) – Mission Bay Block Nos. 29, 30, 31, 32

At these offsite sensitive receptor locations, based on citywide modeling for 2014, PM2.5 concentrations range between 8.3 and 10.0 μg/m^3, and excess cancer risk ranges between 24.3 and 232.3 cases per million. In general, the highest PM2.5 concentrations and excess cancer risk are located northwest of the project site, near the Caltrain station. The lowest PM2.5 concentrations and excess cancer risk are located southeast of the project site, along the waterline.

ODORS

Although offensive odors do not cause physical harm,[22] they can be unpleasant and lead to considerable distress among the public. This distress often generates citizen complaints to local governments and air districts. According to the BAAQMD's *California Environmental Quality Act Air Quality Guidelines* (BAAQMD CEQA Guidelines)[23] and ARB's *Air Quality and Land Use Handbook*,[24] land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, chemical plants, petroleum refineries, auto body shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations.

REGULATORY FRAMEWORK

FEDERAL

FEDERAL CLEAN AIR ACT

The Clean Air Act (CAA) was enacted in 1963 and amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The CAA establishes the NAAQS and specifies future dates for achieving compliance. The CAA also mandates that states submit and implement a State Implementation Plan (SIP) for local areas that fail to meet the standards. The plans must include pollution control measures that demonstrate how the standards will be met. Because

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22 Odors by themselves do not cause harm. However, the chemicals that trigger odors may cause health effects.

23 Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

24 California Air Resources Board. 2005. *Air Quality and Land Use Handbook*. April. Available: http://www.arb.ca.gov/ch/handbook.pdf. Accessed: January 30, 2015.

the city of San Francisco is within the SFBAAB, it is in an area that has been designated as a nonattainment area for the following pollutants, which are regulated under the CAA: ozone, PM10, and PM2.5.

The 1990 amendments to the CAA identify specific emissions-reduction goals for areas that do not meet the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Table 4.G-3, below, shows the NAAQS currently in effect for each criteria pollutant. The SFBAAB fails to meet national standards for ozone and PM2.5 and therefore is considered a federal nonattainment area for these pollutants. Table 4.G-4 on the following page lists each criteria pollutant and its related attainment status.

TABLE 4.G-3. FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]
Ozone (O_3)	1 hour	0.09 ppm[c]	—
	8 hours	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hours	9.0 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	100 ppb[c]
	Annual arithmetic mean	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	75 ppb
	24 hours	0.04 ppm	0.14 ppm
Respirable Particulate Matter (PM10)	24 hours	50 $\mu g/m^3$[c]	150 $\mu g/m^3$
	Annual arithmetic mean	20 $\mu g/m^3$	—
Fine Particulate Matter (PM2.5)	24 hours	—	35 $\mu g/m^3$
	Annual arithmetic mean	12 $\mu g/m^3$	12.0 $\mu g/m^3$
Sulfates	24 hours	25 $\mu g/m^3$	—
Lead (Pb)	30-day average	1.5 $\mu g/m^3$	—
	Calendar quarter	—	1.5 $\mu g/m^3$
	Rolling 3-month average	—	0.15 $\mu g/m^3$
Hydrogen Sulfide	1 hour	0.03 ppm	—
Vinyl Chloride	24 hours	0.01 ppm	—

Source:
California Air Resources Board. 2016. *Ambient Air Quality Standards*. June 4. Available: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed: August 19, 2016.

Notes:

[a] The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour standards), NO_2, PM10, and PM2.5 are not to be exceeded. All other California standards shown are not to be equaled or exceeded.

[b] The NAAQS, other than O_3 and those that are based on annual averages, are not to be exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1.

[c] ppm = parts per million by volume; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter.

TABLE 4.G-4. FEDERAL AND STATE ATTAINMENT STATUS FOR THE BAY AREA AIR BASIN

Pollutants	Federal Classification	State Classification
O_3 (1-hour standard)	—	Nonattainment (serious)
O_3 (8-hour standard)	Nonattainment	Nonattainment
PM10	Unclassified/Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO_2	Unclassified/Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Unclassified/Attainment	Attainment

Source: California Air Resources Board. 2016. *Area Designations Maps/ State and National*. Last revised: December 2015. Available: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed: September 29, 2016.

Local monitoring data (Table 4.G-1, page 4.G-5) are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are further defined as:

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

AIR QUALITY INDEX

USEPA developed the Air Quality Index (AQI) scale to make the public health impacts of air pollution concentrations easily understandable. The AQI 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, as outlined below.

- Green (0–50) indicates "good" air quality. No health impacts are expected when air quality is in the green range.
- Yellow (51–100) indicates air quality is "moderate." Unusually sensitive people should consider limited prolonged outdoor exertion.

- Orange (101–150) indicates air quality is "unhealthy for sensitive groups." Active children and adults, as well as people with respiratory diseases such as asthma, should limit outdoor exertion.
- Red (151–200) indicates air quality is "unhealthy." Everyone may experience health effects, while sensitive groups may experience serious health effects.
- Purple (201–300) indicates air quality is "very unhealthy." Everyone may experience serious health effects.
- Maroon (301–500) indicates air quality is "hazardous." Emergency conditions where the entire population is likely to be affected.

The AQI numbers are based on the federal air quality standards for ozone, CO, NO_2, SO_2, PM10 and PM2.5. If the concentration of any of these pollutants rises above its respective standard, it can be unhealthy for the public. In determining the air quality forecast for the Bay Area, the BAAQMD uses the anticipated concentration measurements for each of the major pollutants, converts them into AQI numbers, then determines the highest AQI for each zone in the district.

Typically, the federal standard for these air pollutants corresponds to the number 100 on the AQI scale. Readings below 100 on the AQI scale would not generally affect the health of the general public, although readings in the moderate range of 50 to 100 may affect unusually sensitive people. Levels above 300 rarely occur in the United States; readings above 200 have not occurred in the Bay Area in decades.[25] Historical BAAQMD data indicate that the City experienced air quality in the red range (unhealthy) 0 days between 2010 and 2016. As shown in Table 4.G-5, below, the City had a total of 3 orange-level days in 2010 (unhealthy for sensitive groups), 2 in 2011, 2 in 2012, 2 in 2013, 0 in 2014, 0 in 2015, and 0 in 2016.

TABLE 4.G-5. AIR QUALITY INDEX STATISTICS FOR THE CITY OF SAN FRANCISCO (2010–2016)

	Number of Days by Year						
AQI Statistics for City of San Francisco	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Unhealthy for Sensitive Groups (Orange)	3	2	2	2	0	0	0
Unhealthy (Red)	0	0	0	0	0	0	0

Sources:

1. U.S. Environmental Protection Agency. 2016. *Download Data Files: Daily Summary Data*. Available: http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html#Daily. Accessed: August 10, 2016.
2. U.S. Environmental Protection Agency. 2016. *Air Quality Index Report*. Available: https://www.epa.gov/outdoor-air-quality-data/air-quality-index-report. Accessed: September 29, 2016.

[25] Bay Area Air Quality Management District. 2016. *AQI*. Available: http://sparetheair.org/stay-informed/todays-air-quality/air-quality-index. Accessed: August 19, 2016.

STATE

CALIFORNIA CLEAN AIR ACT AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

In 1988, the state legislature adopted the California CAA, which established a statewide air pollution control program. The California CAA requires all air districts in the state to endeavor to meet the CAAQS by the earliest practical date. Unlike the federal CAA, the California CAA does not set precise attainment deadlines. Instead, the California CAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards. The CAAQS are generally more stringent than the NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. The CAAQS and NAAQS are listed together in Table 4.G-3, page 4.G-19.

ARB and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans and incorporated into the SIP. In California, USEPA has delegated authority to prepare SIPs to ARB, which, in turn, has delegated that authority to individual air districts. Traditionally, ARB established state air quality standards and maintained oversight authority with respect to air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The California CAA substantially adds to the authority and responsibilities of air districts. It designates air districts as *lead* air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The California CAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The California CAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and establish transportation control measures.

STATE ENGINE EMISSION STANDARDS

ARB established a series of increasingly strict emissions standards for new off-road diesel equipment (Small Off-Road Engines [13 CCR Section 2403-2407] and Tier 4 Off-Road Compression-Ignition Engine Regulations and Exhaust Emission Certification Test Fuel for Off-Road Spark-Ignition Engines, Equipment, and Vehicles [13 CCR Sections 2421–2427]), on-road diesel trucks (California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles [13 CCR Section 1956]), and harbor craft (Low-Sulfur Fuel Requirement, Emission Limits, and Other Requirements for Commercial Harbor Craft [13 CCR Section 2299.6] and Airborne Toxic Control Measure for Commercial Harbor Craft [13 CCR Section 93118.5]).

ARB has also adopted emissions standards to reduce NOx, diesel particulate matter and other criteria pollutant emissions from in-use (i.e., existing) off-road diesel-fueled vehicles (Regulation for In-Use Off-Road Diesel-Fueled Fleets [13 CCR Section 2449]) and in-use on-road diesel-fueled vehicles (Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles [13 CCR Section 2025]).

CARL MOYER PROGRAM

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) offers grants to owners of heavy-duty vehicles and equipment on a volunteer application basis. The program is a partnership between ARB and the local air districts throughout the state to reduce air pollution emissions from heavy-duty engines. Locally, the air districts administer the Carl Moyer Program. The program establishes cost-effectiveness criteria for funding emissions reduction projects ($18,260 per weighted ton of ROG, NO_x, and PM10 as of December 18, 2015, which is the latest update to the Carl Moyer cost-effectiveness criteria); the cost-effectiveness criteria are anticipated to be updated by July 1, 2017.[26]

TOXIC AIR CONTAMINANT REGULATION

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people who were exposed to a significant health risk, and facility plans to reduce these risks. The "Hot Spots" Act requires OEHHA to develop an approach for health risk assessments that can be used to determine the "likelihood of risks." The resultant guidance manual is titled *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*.

In August 1998, ARB identified DPM from diesel-fueled engines as a TAC. In September 2000, ARB approved a comprehensive Diesel Risk Reduction Plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan was to reduce respirable DPM emissions and the associated health risk by 75 percent in 2010 and 85 percent in 2020. The plan identifies 14 measures that ARB has or may implement.

[26] California Air Resources Board. 2015. *Carl Moyer Guidelines*. December 18. Available: https://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmpgl_20151218.pdf. Accessed: December 23, 2016.

REGIONAL

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

The BAAQMD is the regional agency with jurisdiction over the nine-county SFBAAB, which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa Counties and portions of Sonoma and Solano Counties. The BAAQMD is responsible for attaining and maintaining air quality in the SFBAAB with respect to federal and state air quality standards, as established by the federal CAA and the California CAA, respectively. Specifically, the BAAQMD has responsibility for monitoring ambient air pollutant levels throughout the SFBAAB and developing and implementing strategies to attain the applicable federal and state standards. The air quality district is also responsible for establishing and enforcing local air quality rules and regulations to address the requirements of federal and state air quality laws and for ensuring that the NAAQS and CAAQS are met. A list of some of the applicable BAAQMD 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 3 minutes in any 1 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 volatile organic compounds (VOCs) in architectural coatings.
- Regulation 9, Rule 6 (NO_x emissions from natural gas–fired boilers and water heaters): This regulation limits emissions of NO_x generated by natural gas–fired boilers.
- Regulation 9, Rule 8 (Stationary Internal-Combustion Engines): This regulation limits emissions of NO_x and CO from stationary internal-combustion engines of more than 50 horsepower.
- Regulation 11, Rule 2 (Hazardous Pollutants): This regulation limits emissions of asbestos during demolition, renovation, milling, and manufacturing and establishes appropriate waste disposal procedures.

LOCAL

SAN FRANCISCO GENERAL PLAN AIR QUALITY ELEMENT

The San Francisco General Plan provides long-term guidance and policies for maintaining and improving the quality of life and the man-made and natural resources of the community.[27] The Air Quality Element of the San Francisco General Plan is concerned primarily with improving air quality. Objectives and policies that apply to the proposed project are discussed in Chapter 3, *Plans and Policies*, and include the following:

- *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 through the 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 emissions reductions.

SAN FRANCISCO CONSTRUCTION DUST CONTROL ORDINANCE

Dust can be an irritant that causes watery eyes or lung, nose, or throat irritation. Demolition, excavation, grading, and other construction activities can cause wind-blown dust, which could contribute particulate matter to the local atmosphere. Depending on exposure, adverse health effects can result from this particulate matter in general as well as specific contaminants, such as lead or asbestos, which may be constituents of the soil. In response, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes, generally referred to as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008), to reduce the quantity of dust generated during site preparation, demolition, and construction work and protect the health of the general public and onsite workers, minimize public nuisance complaints, and avoid orders to stop work by the Department of Building Inspections (DBI).

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[27] San Francisco Planning Department. n.d. *San Francisco General Plan.* Available: http://www.sf-planning.org/ftp/general_plan/. Accessed: August 27, 2015.

San Francisco Health Code Article 22B[28] and San Francisco Building Code Section 106.A.3.2.6[29] collectively constitute the Construction Dust Control Ordinance. The Port of San Francisco (Port) has incorporated the similar provisions that are in the San Francisco Building Code into the Port Building Code. For projects involving more than 0.5 acre, the Construction Dust Control Ordinance requires the project sponsor to submit a dust control plan for approval by the San Francisco Department of Public Health prior to issuance of a building permit by DBI or Port. The ordinance requires that 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 comply with specified dust control measures, whether or not the activity requires a permit from the DBI or the Port.

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, unless the director waives the requirement. The Construction Dust Control Ordinance requires the project sponsors and contractors who are responsible for construction activities to minimize visible dust on the site. Dust suppression activities may include watering all active construction areas to prevent dust from becoming airborne. Increased watering frequency may be necessary whenever wind speeds exceed 15 mph. Reclaimed water must be used if required by Article 21, Section 1100 et seq., of the San Francisco Public Works Code. The Construction Dust Control Ordinance is described in greater detail under Impact AQ-1 below.

SAN FRANCISCO HEALTH CODE PROVISIONS REGARDING ROADWAY-GENERATED POLLUTANTS (ARTICLE 38)

San Francisco adopted a series of amendments to the San Francisco Building and Health Codes, generally referred to as "Enhanced Ventilation Required for Urban Infill Sensitive-Use Developments," or Health Code Article 38 (Ordinance 224-14, effective December 8, 2014). The purpose of Article 38 is to protect the public health and welfare by establishing the APEZ and imposing an enhanced ventilation requirement for all urban-infill sensitive-use development within the APEZ.

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[28] San Francisco Department of Public Health. 2008a. *Article 22B Construction Dust Control Requirements*. Available: http://health.sanfranciscocode.org/22B/. Accessed: August 27, 2015.

[29] San Francisco Planning Department. 2010. *2010 San Francisco Building Code*. Available: http://www.energy.ca.gov/title24/2008standards/ordinances/sanfrancisco/2010-12-29_San_Francisco_2010_Building_Code.pdf. Accessed: August 27, 2015.

ENVIRONMENTAL IMPACTS

This section describes the impact analysis related to air quality for the project. It describes the methods used to determine the impacts of the project and lists the thresholds that were used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The project would have a significant effect if it would result in any of the conditions listed below.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard (including through the release of emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors that would affect a substantial number of people.

METHODS FOR ANALYSIS

Construction of the proposed project is anticipated to occur over multiple areas, with an area becoming operational upon completion of construction activities for that area and subsequent areas initiating construction while previously completed areas are operational. The methods for analysis of construction and operational impacts are described below.

The AQTR, included as Appendix 6-2 to this Draft EIR, presents additional detail on the methods used for the analysis.

CLEAN AIR PLAN CONSISTENCY

The applicable air quality plan is the BAAQMD's 2010 Clean Air Plan (discussed in the Regulatory Setting section, above), which identifies measures to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to the air pollutants that pose the greatest health risk, with an emphasis on protecting communities that are most heavily affected by air pollution; and reduce greenhouse gas (GHG) emissions to protect the climate (see Section 4.H, *Greenhouse Gas Emissions*). Consistency with the 2010 Clean

Air Plan can be determined by considering whether a project supports the goals of the plan, includes applicable control measures from the plan, or disrupts or hinders implementation of any control measures from the plan. Consistency with this Plan is the basis for determining whether a proposed project would conflict with or obstruct implementation of an applicable air quality plan.

CRITERIA AIR POLLUTANTS

As described above under *Regulatory Framework*, the SFBAAB experiences low concentrations of most pollutants compared to federal or state standards and is designated as either in attainment or unclassified for most criteria pollutants, except for ozone, PM2.5, and PM10; the SFBAAB is designated as a nonattainment area for these pollutants under either the state or federal standards.

By definition, regional air pollution is largely a cumulative impact because no single project is large enough by itself to result in nonattainment of air quality standards. Instead, a project's individual emissions contribute to 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 is considered significant.

Table 4.G-6, on the following page, identifies the significance thresholds for criteria air pollutants, followed by a discussion of each threshold. Projects that would result in criteria pollutant emissions that would be 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 SFBAAB.

The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants that may contribute to an existing or projected air quality violation is based on the state and federal CAA 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). 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.

TABLE 4.G-6. CRITERIA AIR POLLUTANT THRESHOLDS

Pollutant	Construction Thresholds Average Daily Emissions (pounds per day)	Operational Thresholds	
		Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tons per year)
ROG	54	54	10
NO_x	54	54	10
PM10	82 (exhaust)	83	15
PM2.5	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not applicable	

Source:

Bay Area Air Quality Management District. 2011. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA.

Abbreviations:

ROG = reactive organic gas.
NO_x = nitrogen oxides.
PM10 = particulate matter less than or equal to 10 microns in diameter.
PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

The federal New Source Review (NSR) program was created under the federal CAA 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 PM10 and PM2.5, the emissions limit under NSR 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.

Although the regulations specified above apply to new or modified stationary sources, land use development projects generate ROG, NOx, PM10, and PM2.5 emissions as a result of increases in vehicle trips, energy use, architectural coating, and construction activities. Therefore, the identified thresholds can be 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 projects that would contribute to an existing or projected air quality violation or result in a considerable net increase in ozone precursors or particulate matter. Because of the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites controls fugitive dust significantly, and individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent. The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities. 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. This analysis assumes that the project would implement the requirements of the Construction Dust Control Ordinance, which is the basis for determining the significance of air quality impacts due to fugitive dust emissions.

CRITERIA AIR POLLUTANT EMISSIONS METHODS

CONSTRUCTION

Mass average daily and annual combustion criteria pollutant and off-gassing emissions[30] were estimated using the California Emissions Estimator Model (CalEEMod) (version 2013.2.2), an emissions estimation/evaluation model that was developed in collaboration with the air quality management districts of California.[31] 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 construction equipment;
- On-road mobile equipment associated with workers, vendors, and hauling;
- Fugitive dust (PM10 and PM2.5) associated with grading, demolition, truck loading, and roads;[32] and
- ROG emissions from architectural coating (including painting on parking lots) and paving.

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30 For example, evaporative emissions of ROG from the application of architectural coatings and asphalt paving. For the purposes of this analysis, ROGs are synonymous with off-gassing emissions of VOCs produced from the application of architectural coatings and asphalt paving.

31 ENVIRON International Corporation and the California Air Districts. 2013. *California Emissions Estimator Model*. Version 2013.2.2. Prepared for the California Air Pollution Control Officers Association. July. Available: http://www.caleemod.com/.

32 Fugitive dust emissions from construction were not included in this analysis, because compliance with the San Francisco Dust Control Ordinance (Ordinance 176-08) is sufficient to reduce impacts from construction dust emissions to less-than-significant levels. Furthermore, the criteria air pollutant thresholds for construction activities apply only to exhaust emissions.

New construction equipment used for the project, including heavy-duty trucks and off-road construction equipment, would be required to comply with the state tailpipe emissions standards, as discussed in the *Regulatory Framework* section, above. For purposes of construction phasing, the project site has been divided into four areas, each with four general construction phases (i.e., demolition and rough grading, infrastructure, foundation and building, and paving and landscape phases), as shown in Figure 2-16 of Chapter 2, *Project Description*. Each area would consist of two or three development blocks and associated areas for streets and open spaces. Table 2-10 and Figure 2-16 of Chapter 2, *Project Description*, summarize the proposed project phasing by area. Table 3 of the AQTR summarizes the detailed construction schedule by phase.

Construction of the project would require multiple phases over a projected 6-year construction period, beginning in 2017. Assuming a shorter construction period of six years presents a worst-case analysis as more construction activity would be required per year, increasing the average daily and annual emissions. Because activities during several phases would occur concurrently, it was assumed that, during these periods of overlap, all equipment would operate at the same time. Emissions were converted from tons per year to pounds per day using the estimated construction duration of 1,568 working days for the construction period. Daily average emissions estimates for individual phases occurring in each construction phase were therefore added to obtain average daily emissions on a yearly basis.

The emissions estimates provided in this analysis reflect a specific set of conservative assumptions, based on an expected construction scenario wherein a relatively large amount of construction takes place during a relatively intensive and overlapping schedule. Because of this conservative assumption, actual emissions could be less than those estimated in this analysis. If construction is delayed or occurs over a longer period, emissions could be reduced because of (1) a more modern and cleaner-burning 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, average daily emissions could increase. However, the project sponsor has indicated that the construction schedule used in this analysis is a reasonable and conservative schedule of actual construction activities for purposes of analyzing impacts. The proposed project phasing, as presented in this document, is an estimate, providing the most conservative scenario. The phasing of project implementation would be subject to change due to market conditions and other unanticipated factors and could extend beyond 2023.

Assumptions regarding construction phasing and equipment use were based on information received from the project sponsor and the construction contractor.[33] A complete list of the construction equipment for each phase, construction phase duration assumptions, and changes

[33] Mesikepp, Sam. Hathaway Dinwiddie Construction Company. September 6, 2016—email communication with ICF International.

to modeling default values used in this analysis is included in the AQTR. The assessment of construction air quality impacts considers each of the following emissions sources, discussed in greater detail in the AQTR:

1. Off-road construction equipment (including generators)
2. Asphalt paving
3. Architectural coatings
4. On-road vehicles (travel and idling)
5. Jet grouting
6. In-water equipment

Sources one through three were analyzed using CalEEMod, as described above. Idling emissions from on-road vehicles, including those used to support jet grouting activities, were estimated using emission factors from the ARB's EMission FACtors 2011 (EMFAC2011) model.[34] Travel emissions from on-road vehicles were estimated using emission factors from the ARB's EMFAC2014 model. [35] Emissions from in-water equipment were estimated using the methodology from the ARB's Emissions Estimation Methodology for Commercial Harbor Craft Operating in California.[36]

OPERATION

Mass average daily and annual mobile- and area-source emissions were estimated using the CalEEMod (version 2013.2.2) 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.

Construction of Area 1 is estimated to occur from about 2017 to 2020. It was conservatively assumed that structures would be fully occupied immediately following construction and that operational emissions associated with Area 1 would begin in 2021. Accordingly, concurrent construction and operational activities are estimated to occur from 2021 through 2023, resulting in higher daily emissions than would result from either the construction or operational component when analyzed separately. Therefore, emissions for overlapping construction and operational activities were combined for the analysis of potential air quality impacts.

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[34] California Air Resources Board. 2011. *EMFAC2011.* Available: https://www.arb.ca.gov/msei/categories.htm.

[35] California Air Resources Board. 2014. *EMFAC2014.* Version 1.0.7. Available: https://www.arb.ca.gov/msei/categories.htm.

[36] California Air Resources Board. 2012. *Emissions Estimation Methodology for Commercial Harbor Craft Operating in California*. Appendix B. Available: https://www.arb.ca.gov/msei/chc-appendix-b-emission-estimates-ver02-27-2012.pdf. Accessed: March 2, 2017.

As discussed above, the project sponsor has indicated that the construction schedule, and therefore the operational schedule, used in this analysis is a reasonable conservative schedule of actual construction activities for purposes of analyzing impacts. The phasing of project implementation would be subject to change due to market conditions and other unanticipated factors and could extend beyond 2023.

Operation of the proposed project would generate emissions from the following sources:

1. Mobile Sources: On-road motor vehicle activity generated by the new land uses associated with the proposed project
2. Area/Energy Sources: Landscaping equipment, consumer products, natural gas fireplaces/hearths
3. Stationary/Point Sources: Emergency generators (2,000 horsepower each), which would also power fire pumps, and idling delivery vehicles associated with commercial and retail land uses
4. Industrial/Manufacturing (analyzed as a brewery) Operations: VOC and particulate matter emissions from beer production

Emissions were estimated from these sources using CalEEMod, EMFAC2014, and protocols from the ARB and USEPA. Please refer to the AQTR for more details regarding the methods and assumptions used in the modeling.

LOCAL HEALTH RISK AND HAZARDS

In addition to criteria air pollutants, individual projects may emit TACs. As part of this project EIR, an HRA was conducted to provide quantitative estimates of health risks from exposures to TACs.

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 *Environmental Setting* section, above, and were developed in consultation with BAAQMD as part of preparation of a Community Risk Reduction Plan (CRRP).[37]

[37] For example, evaporative emissions of ROG from the application of architectural coatings and asphalt paving. For the purposes of this analysis, ROGs are synonymous with off-gassing emissions of VOCs produced from the application of architectural coatings and asphalt paving. ENVIRON International Corporation and the California Air Districts. 2013. *California Emissions Estimator Model.* Version 2013.2.2. Prepared for the California Air Pollution Control Officers Association. July. Available: http://www.caleemod.com/.

The project site itself is not within an identified health vulnerable zip code; therefore, the APEZ criteria for onsite receptors at the project site is based on:

1. Cumulative PM2.5 concentrations greater than 10.0 μg/m^3, and/or
2. Excess cancer risk from the contribution of emissions from all modeled sources greater than 100.0 per 1 million in the population.

For projects that could result in sensitive receptor locations meeting the APEZ criteria, which otherwise would not occur without the project, a proposed project that would emit PM2.5 concentrations above 0.3 μg/m^3 or result in an excess cancer risk greater than 10.0 per 1 million would be considered a project with a significant impact. The 0.3 μg/m^3 PM2.5 concentration and the excess cancer risk of 10.0 per 1 million persons exposed are the levels below which the BAAQMD considers contributions to cumulative health risks from new sources not considerable.[38]

For those locations that already meet the APEZ criteria, a lower significance standard is required to ensure that a proposed project's contribution to existing health risks would not be significant. Because the project is not within the APEZ, the above thresholds apply to onsite receptors associated with the proposed project.

For projects that could affect sensitive receptor locations that already meet the APEZ criteria without the project, a proposed project that would emit PM2.5 concentration above 0.2 μg/m^3 or result in an excess cancer risk greater than 7.0 per million would be considered a project with a significant impact. The 0.2 μg/m^3 PM2.5 concentration and the excess cancer risk of 7.0 per 1 million persons exposed are the levels below which the BAAQMD considers contributions to cumulative health risks from new sources not considerable for those receptors already located in the APEZ. For the proposed project, these thresholds apply to offsite receptors that are already located in the APEZ.

Table 4.G-7, on the following page, on the following page presents the health risk thresholds that are applied to the proposed project.

[38] Fugitive dust emissions from construction were not included in this analysis, because compliance with the San Francisco Dust Control Ordinance (Ordinance 176-08) is sufficient to reduce impacts from construction dust emissions to less-than-significant levels. Furthermore, the criteria air pollutant thresholds for construction activities apply only to exhaust emissions.

TABLE 4.G-7. HEALTH RISK SIGNIFICANCE THRESHOLDS

Affected Sensitive Receptors	Thresholds for Construction and Operation	
	PM2.5 ($\mu g/m^3$)	Excess Cancer Risk (cases per one million population)
• Criteria for sensitive receptor located within the APEZ		
○ Outside Health Vulnerability zip code [a]	10.0	100
○ Within Health Vulnerability zip code [b]	9.0	90
• Project contributions to sensitive receptor locations within the APEZ [c]	0.2	7.0
• Project contributions to sensitive receptor locations not within the APEZ but brought into the APEZ as a result of the project [a]	0.3	10.0

Sources:

1. Bay Area Air Quality Management District. 2009. *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance.* October. Page 7. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en. Accessed: March 16, 2017;
2. Bay Area Air Quality Management District. 2010. *California Environmental Quality Act Guidelines Update, Proposed Air Quality CEQA Thresholds of Significance*. May. Page 2-2. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/draft_baaqmd_ceqa_guidelines_may_2010_final.pdf?la=en. Accessed: March 16, 2017;
3. San Francisco Department of Public Health, Environmental Health, Planning. 2009. *Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map dated April 9, 2014*.

Notes:

a. See Section *San Francisco Modeling of Air Pollution Exposure Zone discussion* above,

b. Bay Area Air Quality Management District. 2010. *California Environmental Quality Act Guidelines Update, Proposed Air Quality CEQA Thresholds of Significance*. May. page 2-2.

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. A 0.2 $\mu g/m^3$ increase in PM2.5 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.

Abbreviations:

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

APEZ = Air Pollutant Exposure Zone.

HEALTH RISK ASSESSMENT METHODS

Health risks and PM2.5 concentrations at (existing and future) sensitive receptor locations associated with construction and operation of the proposed project were evaluated in an HRA.

Because the residential exposure assumptions are more conservative than those for other sensitive receptor types (such as hospitals, schools, and day care facilities), a conservative approach of considering all sensitive receptors as residential sensitive receptors was used in this analysis.

The HRA assessed health risk impacts using OEHHA 2015 Guidance (*Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*).[39] This guidance incorporates the latest science and recommendations from OEHHA.

As described above, the City and County of San Francisco, in conjunction with the BAAQMD, completed a citywide HRA to evaluate cumulative cancer risks and PM2.5 concentrations from existing stationary and mobile sources as part of development of a CRRP.[40] The citywide modeling was conducted for 2014 and 2025. To evaluate cumulative health risks for receptors within 1,000 feet of the project site, predicted health risks and PM2.5 concentrations from construction and operational activities associated with the proposed project were added to values from the City's CRRP GIS 20-meter grid system database for 2014 and 2025. This allows total cancer risk and total PM2.5 concentrations to be determined for each receptor by summing all of the sources (i.e., existing, plus ambient (PM2.5), plus project construction, plus project operation). The CRRP cancer risk values have been adjusted to reflect the latest 2015 OEHHA guidance and the BAAQMD recommendations for cancer risk using a scaling factor of 1.3744.[41]

POLLUTANT SELECTION

This analysis evaluates health risks associated with the proposed project, based on the exposure of sensitive receptors to TAC emissions,[42] including DPM, PM2.5, and TOGs from gasoline-powered vehicles. DPM is a complex mixture of gases and fine particles that includes more than 40 substances that are listed by USEPA as hazardous air pollutants and by ARB as TACs.[43]

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39 Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February. Available: http://oehha.ca.gov/air/hot_spots/ hotspots2015.html. Accessed: August 11, 2015.

40 Bay Area Air Quality Management District. 2012b. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*. December. Available: http://www.gsweventcenter.com/Draft_SEIR_ References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf. Accessed: August 27, 2015.

41 Lau, Virginia. Bay Area Air Quality Management District. February 3, 2016—email communication with Ramboll Environ.

42 Toxic air contaminants evaluated in this analysis include 1,3-butadiene, acetaldehyde, benzene, ethylbenzene, formaldehyde, and naphthalene.

43 Office of Environmental Health Hazard Assessment. 1998. *Findings of the Scientific Review Panel on the Report on Diesel Exhaust, as Adopted at the Panel's April 22, 1998, Meeting.* Available: http://www.arb.ca.gov/toxics/ dieseltac/de-fnds.htm. Accessed: February 2013.

However, the DPM analysis uses PM10 emissions as a surrogate for DPM emissions. OEHHA guidance indicates that, although the cancer potency factor to be used to evaluate cancer risks is based on whole diesel exhaust (gas and particulate matter), the surrogate for whole diesel exhaust is DPM, with PM10 serving as the basis for the potential risk calculations.[44]

In addition to evaluating the effects of TAC concentrations, this analysis evaluates PM2.5 concentrations. The analysis also evaluates health risks associated with specific TOG emissions from operational gasoline vehicles. These emissions include 1,3-butadiene, acetaldehyde, benzene, ethylbenzene, formaldehyde, and naphthalene. TOG emissions were estimated by multiplying total gasoline ROG emissions by TAC speciation factors from the BAAQMD, and cancer risks were estimated by using cancer risk factors from the BAAQMD.[45]

AIR DISPERSION MODELING

USEPA's AERMOD model (version 15181) was used to estimate annual DPM, PM2.5 exhaust, and TOG concentrations at onsite and nearby receptors. Modeling inputs, including source characteristics (e.g., release height, initial dispersion), were based on published guidance from OEHHA,[46] the BAAQMD,[47,48] and the San Joaquin Valley Air Pollution Control District (SJVAPCD).[49] SJVAPCD guidance was used for release parameters for certain sources not included in the OEHHA or BAAQMD guidance. The AQTR presents additional detail on the air dispersion modeling.

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44 Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February. Available: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed: August 11, 2015.

45 Bay Area Air Quality Management District. 2012a. *Recommended Methods for Screening and Modeling Local Risks and Hazards.* May. Table 14. Available: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Risk%20Modeling%20Approach%20May%202012.ashx?la=en. Accessed: August 11, 2015.

46 Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February. Available: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed: August 11, 2015.

47 Bay Area Air Quality Management District. 2012a. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May. Available: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Risk%20Modeling%20Approach%20May%202012.ashx?la=en. Accessed: August 11, 2015.

48 Bay Area Air Quality Management *District*. 2012b. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*. December. Available: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf. Accessed: August 27, 2015.

49 San Joaquin Valley Air Pollution Control District. 2015. *Final Staff Report: Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document*. May 28. Available: https://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf. Accessed: August 11, 2015.

OVERVIEW

Proposed project construction and operations would generate PM2.5 and DPM, resulting in the exposure of nearby existing sensitive receptors to increased PM2.5 concentrations and health risks associated with DPM. Similarly, new residents and children in potential day care centers who occupy the project site prior to completion of the entire project may be exposed to a portion of the PM2.5 and DPM generated during construction and operations. Therefore, exposure to PM2.5 and DPM emissions from construction and operations was assessed by predicting PM2.5 and DPM concentrations at onsite and offsite residential receptor locations.

CONSTRUCTION

Construction-related DPM and PM2.5 exhaust emissions from heavy-duty equipment and on-road vehicles were estimated using CalEEMod, as discussed above for mass emissions. With respect to construction activities, all PM10 exhaust from off-road equipment during construction was assumed to be DPM.[50, 51]

Construction health risks were calculated for two scenarios.

1. **Construction Scenario 1** (2017–2023) considers emissions associated with construction activities before any portion of the project site becomes operational and the resultant effects of emissions on *existing and future offsite sensitive receptors* located within 1,000 feet of the proposed project.
2. **Construction Scenario 2** (2020–2023) considers construction emissions associated with the remaining phases of construction and the resultant effects of emissions on *new onsite sensitive receptors* associated with the proposed project.

Cancer health risks associated with exposure to diesel exhaust are typically related to chronic exposure, with long-term exposure assumed. Exposure to construction DPM emissions were assessed by predicting the health risks in terms of excess cancer risks at both onsite and offsite receptor locations. Exposure to carcinogens is expressed in terms of the number of people in 1 million who could contract cancer over a lifetime of exposure.

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50 Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February. Available: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed: August 11, 2015.

51 Bay Area Air Quality Management *District*. 2012b. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*. December. Available: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf. Accessed: August 27, 2015

OPERATION

Operations-related DPM, PM2.5 exhaust, and TOG emissions were estimated using CalEEMod and other protocols, as discussed above for mass emissions. With respect to operational activities, all PM10 exhaust from vehicles and generators was assumed to be DPM.[52]

Operational health risks were calculated for two 30-year exposure scenarios (OEHHA requires analysis of a 30-year exposure[53]).

1. **Operational Scenario 1** (2023–2053) considers the resultant effects of operational emissions from full buildout of the project on *existing and future offsite sensitive receptors* located within 1,000 feet of the project site and *new onsite sensitive receptors* associated with the proposed project.
2. **Operational Scenario 2** (2017–2047) considers the resultant effects of both construction emissions and operational emissions on *existing and future offsite sensitive receptors* located within 1,000 feet of the project site and *new onsite sensitive receptors* associated with the proposed project.

Operational Scenario 2 begins in year 2017 because this is the first year of construction. For example, Operational Scenario 2 would include 6 years of construction (2017–2023) and 28 years of operation (2020–2047), with 4 years of overlapping construction and operational emissions (2020–2023, since Area 1 is operational in 2020 when construction is finished), for a total of 30 years of emissions exposure.

Over the life of the project, onsite and offsite sensitive receptors would be exposed to DPM from periodic emergency generator operation, truck idling at commercial loading areas, and commercial truck trips.

Proposed project operational traffic would also generate vehicle-related TACs from gasoline TOG emissions, resulting in the exposure of nearby existing offsite and new onsite sensitive receptors to increased TAC concentrations. Non-DPM TACs are typically associated with gasoline vehicles. Project vehicles would not be numerous enough to constitute a substantial source. Substantial sources, such as freeways, are located more than 1,000 feet from the project site and therefore not included in the TAC analysis.

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[52] Bay Area Air Quality Management District. 2012b. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*. December. Available: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf. Accessed: August 27, 2015

[53] Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot-Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February. Available: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed: August 11, 2015.

CONSTRUCTION AND OPERATION COMBINED

Proposed project construction and operation would generate PM2.5 and DPM emissions, resulting in the exposure of both existing and new sensitive receptors (at the project site) to increased PM2.5 concentrations and health risks associated with DPM over their lifetimes. Under the assumed exposure scenarios, existing sensitive receptors would be exposed to construction emissions from 2017 to 2023, along with full-buildout operational emissions from 2023 onward. New sensitive receptors who occupy the project site could also be exposed to both construction (2020–2023) and operational health risks (2023 and onward). For example, residents who occupy Area 1 would be exposed to construction emissions from Areas 2, 3, and 4 after 2020, along with operational emissions from all areas after 2023.

As noted above, Operational Scenario 2 (2017–2047) considers construction emissions associated with the proposed project *plus* operational emissions as well as the resultant effects of emissions on *existing offsite and new onsite sensitive receptors* associated with the proposed project.

The values presented for construction and operation are not the sum of all risks from the construction and operational tables presented above because each risk calculation assumes that a receptor begins exposure at the third trimester of pregnancy. For combined risk, receptors are exposed to construction emissions beginning in the third trimester of pregnancy, with operational emissions later in life (e.g., at year 3 or 6).

PRESENTATION OF MODELING RESULTS

Exposure to TACs was evaluated by examining the exposure of onsite and offsite sensitive receptors to the total effect of existing, proposed project (construction and operation), and reasonably foreseeable future sources of TAC emissions.

Multiple existing TAC emissions sources would be within 1,000 feet of onsite and offsite sensitive receptors, including the following:

- Existing Sources: Multiple existing stationary, rail, and roadway sources within 1,000 feet of the project generate TACs.
- Future Sources: The City's CRRP database includes cancer risks and PM2.5 concentrations from all sources that are anticipated to be present in 2025. A 2040 analysis was not conducted because the 2040 citywide modeling in the CRRP shows that PM2.5 and excess cancer risk generally decrease for receptor points within 1,000 feet of the project site under 2040 conditions without the project (compared with 2025 conditions). This is because of more fuel-efficient engines and better emissions controls for new vehicles. Thus, the 2025 analysis presents a reasonable worst-case scenario.

- Project Sources: The project would contribute construction TAC emissions as well as operational TAC emissions associated with onsite emergency generators, truck loading at onsite loading bays, truck deliveries to the Pier 48 industrial/manufacturing use (specifically analyzed as a brewery), and traffic-related emissions added to nearby roadways.

The results of the impact assessment are summarized in Tables 4.G-17 through 4.G-19 (pages 4.G-72 through 4.G-77). Individual source contributions are provided in the AQTR.

Health risks are presented below for both modeled maximum PM2.5 exhaust concentrations and modeled lifetime excess cancer risks from DPM and operational TOGs from the proposed project for both onsite and offsite receptors. The tables also show background values from the CRRP for each receptor type under existing (2014) and future (2025) scenarios. Proposed project and mitigated emissions after implementation of Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.3, and M-AQ-2.1, and M-AQ-2c are also presented in each table.[54]

ODORS

Although the BAAQMD's CEQA Guidelines contain methodology for evaluating odor impacts (i.e., an evaluation of the exposure of existing receptors to new odor sources or the exposure of new receptors to existing odor sources), 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).

CUMULATIVE IMPACTS

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 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 large enough to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions.[55] 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 be considered a project that would result in a considerable contribution to cumulative regional air quality impacts.

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[54] Mitigated operational **e**missions assume incorporation of project design features, which are part of the proposed project, including measures from the Sustainability Plan as well as the transportation demand management measures that are assumed to reduce estimated project trips by 20 percent. California Air Resources Board. 2014. *EMFAC2014.* Version 1.0.7. Available: https://www.arb.ca.gov/msei/categories.htm.

[55] California Air Resources Board. 2012. *Emissions Estimation Methodology for Commercial Harbor Craft Operating in California*. Appendix B.

Similarly, the HRA 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. Other future projects, whose emissions have not been incorporated into the existing citywide health risk modeling, such as the event center and mixed-use development at Mission Bay Blocks 29–32 and Pier 70, would similarly be subject to CEQA requirements to analyze the health risk impact of their projects. However, health risk impacts are localized, and health risks from sources decrease substantially with increasing distance. Thus, cumulative impacts from the event center and mixed-use development at Mission Bay Blocks 29–32 and Pier 70 would not combine with the proposed project's emissions to substantially increase health risks within the project vicinity. Thus, because the project-level analysis includes health risks from all known existing sources that could combine with project sources, the project-level analysis is also a cumulative health risk analysis.

LAND USE ASSUMPTIONS

As described in Chapter 2, *Project Description*, this environmental impact report (EIR) analyzes two land use assumptions: the High Commercial Assumption and the High Residential Assumption. These assumptions represent the two development programs that could be implemented under the flexible zoning proposed for Blocks H, I, and J.

For the construction analysis, the project sponsor has indicated that the types of construction activities would not substantially differ between High Commercial and High Residential. Accordingly, the construction impact assessment is based on a single set of construction assumptions.

For the operational analysis, the characteristics of Areas 1 through 3 are identical for the High Commercial and High Residential land use assumptions. Accordingly, the High Commercial and High Residential land use assumptions differ only in terms of operational emissions generated by the development blocks in Area 4. Because the land use mix between the High Commercial and High Residential Assumptions differs for Area 4, the operational trip generation and mobile source emissions along with the area source emissions associated with each land use type vary slightly between the two assumptions for Area 4. The March 2017 Seawall Lot 337/Pier 48 (Mission Rock) Project Air Quality Technical Report (AQTR), included as Appendix 6-2 to this Draft EIR, presents additional detail on the differences assumed for each assumption. The trip generation rates upon which the operational analysis is based are presented in the Transportation Impact Study (Appendix 4-1).

IMPACTS NOT EVALUATED IN DETAIL

OTHER CRITERIA AIR POLLUTANTS

Regional concentrations of CO in the Bay Area have not exceeded the state standards in the past 11 years, and SO_2 concentrations have never exceeded the standards. The primary source of CO emissions from development projects is vehicle traffic. Construction-related SO_2 emissions represent a negligible portion of the total basin-wide emissions, and construction-related CO emissions represent less than 5 percent of the Bay Area total basin-wide 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 (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed screening criteria of 44,000 vehicles per hour at affected intersections or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited. Please refer to the CO Screening Memo found in Appendix 6-1, which indicates that a quantitative CO analysis is not required. CO impacts are considered less than significant because project-related traffic is below the BAAQMD's CO screening criteria. Therefore, given the Bay Area's attainment status and the limited CO and SO_2 emissions that could result from development projects, the development projects would not result in a cumulatively considerable net increase in CO or SO_2, and quantitative analysis is not required.

IMPACTS AND MITIGATION MEASURES

Impact AQ-1: Construction of the proposed project would generate fugitive dust and criteria air pollutants, which for criteria air pollutants but not fugitive dust, 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 for Criteria Air Pollutants)

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, and truck hauling trips. In addition, fugitive dust emissions would result from site disturbance, whereas 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.

FUGITIVE DUST

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust, which could contribute particulate matter to the local atmosphere. The Construction Dust Control Ordinance 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 Port Harbor Master. The Port Harbor Master may waive this requirement for activities on sites of less than 0.5 acre that are unlikely to result in any visible wind-blown dust. Interior-only tenant improvement projects that are greater than 0.5 acre and will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

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, if required, unless the Director waives the requirement. The Construction Dust Control Ordinance requires the project sponsors and 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, drillings, 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 that may be included in a Dust Control Plan, which is required, 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 if required by Article 21, Section 1100 et seq., of the San Francisco Public Works Code.

City Ordinance 175-91 requires the use of nonpotable 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 DPH 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 would be reduced to a ***less-than-significant*** level.

CRITERIA AIR POLLUTANTS

Estimated emissions are summarized in Table 4.G-8, on the following page, and representative of emissions under both the High Commercial and High Residential Assumptions, because the construction activity and schedule do not differ between the two land use assumptions. As indicated in Table 4.G-8, construction-related ROG emissions are anticipated to exceed the ROG threshold of 54 pounds per day in 2019 by approximately 11.6 pounds. The primary source of ROG would be fugitive emissions from architectural coatings and asphalt paving activities (representing approximately 68 percent of total ROG emissions in 2019). Table 4.G-8 also indicates that construction-related NO_X emissions are anticipated to exceed NO_X threshold of 54 pounds per day from 2018 to 2021 by 15 to 102 pounds. The primary source of NO_X emissions would be off-road construction equipment (representing approximately 73 percent of total NO_X emissions). ROG and NOx thresholds would be exceeded during these years because that is when the majority of construction activities would occur and when the greatest number of construction phases would overlap. This is considered a ***significant impact***.

MITIGATION MEASURES. Mitigation Measures M-AQ-1.1 through M-AQ-1.4 require engines on certain types of construction equipment to meet higher emissions standards. As shown in Table 4.G-9, page 4.G-47,which summarize construction emissions with incorporation of Mitigation Measures M-AQ-1.1 (all off-road equipment to have Tier 4 interim engines, reducing off-road ROG emissions by 70–80 percent and NO_X emissions by 5–65 percent, depending on the year), M-AQ-1.2 (all haul trucks to be model year 2010 or newer, reducing on-road truck ROG emissions by 6–56 percent and NO_X emissions by 17–67 percent, depending on the year), M-AQ-1.3 (90 percent of all architectural coatings to have a maximum of 10 grams of VOC per liter [g VOC/l], reducing coating ROG emissions by 80 percent), and M-AQ-1.4 (all construction barge engines to have Tier 3 engines and all construction work boat engines to be model year 2005 or newer, reducing barge ROG emissions by 43 percent and NO_X emissions by 55 percent, depending on the year), construction-related ROG emissions would be reduced below the BAAQMD's thresholds of significance.[56] With implementation of these mitigation measures, NO_X emissions would remain in excess of the BAAQMD's thresholds of significance from 2018 to 2020, but 2021 emissions would be reduced below the threshold of significance.

[56] Although construction emissions of ROG and NOx would exceed only the criteria pollutant thresholds for 2018 through 2021, these mitigation measures would apply to all years of construction (2017 through 2023) because the project would expose sensitive receptors to substantial air pollutant concentrations (Impact AQ-4) without mitigation, an impact that would include exposure from all years of construction. See discussion under Impact AQ-4, below.

TABLE 4.G-8. SUMMARIZED AVERAGE DAILY AND ANNUAL CONSTRUCTION EMISSIONS BY ANALYSIS YEAR

	Average Daily Emissions (lbs/day)			
Year	**ROG**	**NOx**	**PM10 Exhaust**	**PM2.5 Exhaust**
2017	2.0	22.7	0.8	0.7
2018	37.3	**123.9**	5.3	5.1
2019	**65.6**	**155.8**	6.6	6.3
2020	50.2	**126.9**	4.9	4.7
2021	34.2	**69.1**	2.5	2.4
2022	17.8	23.5	0.9	0.9
2023	4.4	5.8	0.2	0.2
2024	0.0	0.0	0.0	0.0
Significance Threshold	*54*	*54*	*82*	*54*
	Annual Emissions (tons/year)			
Year	**ROG**	**NOx**	**PM10 Exhaust**	**PM2.5 Exhaust**
2017	0.3	2.9	<0.1	<0.1
2018	4.8	**16.1**	0.7	0.7
2019	8.6	**20.3**	0.9	0.8
2020	6.4	**14.9**	0.6	0.5
2021	4.5	9.0	0.3	0.3
2022	2.3	3.1	0.1	0.1
2023	0.6	0.8	<0.1	<0.1
2024	0.0	0.0	0.0	0.0
Significance Threshold	*10*	*10*	*15*	*10*

Notes:

Emissions over threshold levels are in **bold.**

Source:

AQTR and ENVIRON International Corporation and the California Air Districts. 2013. *CalEEMod User's Guide*. Version 2013.2. Appendix A: Calculation Details for CalEEMod. Prepared for the California Air Pollution Control Officers Association. July. Available: http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixa.pdf?sfvrsn=2. Accessed: October 12, 2015.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

TABLE 4.G-9. SUMMARIZED MITIGATED AVERAGE DAILY AND ANNUAL CONSTRUCTION EMISSIONS BY ANALYSIS YEAR (EXCLUDING OFFSETS)

	Average Daily Emissions (lbs/day)			
Year	**ROG**	**NOx**	**PM10 Exhaust**	**PM2.5 Exhaust**
2017	0.7	8.4	< 0.1	< 0.1
2018	8.9	**63.0**	1.0	1.0
2019	14.5	**90.5**	1.3	1.3
2020	11.7	**80.4**	1.2	1.2
2021	7.2	51.7	0.7	0.6
2022	3.4	19.4	0.3	0.2
2023	0.9	5.1	< 0.1	< 0.1
2024	0.0	0.0	0.0	0.0
Significance Threshold	*54*	*54*	*82*	*54*
	Annual Emissions (tons/year)			
Year	**ROG**	**NOx**	**PM10 Exhaust**	**PM2.5 Exhaust**
2017	<0.1	1.1	<0.1	<0.1
2018	1.4	8.2	0.1	0.1
2019	2.4	**11.8**	0.2	0.2
2020	1.9	9.8	0.1	0.1
2021	1.2	6.7	<0.1	<0.1
2022	0.6	2.5	<0.1	<0.1
2023	0.2	0.7	<0.1	<0.1
2024	0.0	0.0	0.0	0.0
Significance Threshold	*10*	*10*	*15*	*10*

Notes:

Emissions over threshold levels are in **bold.** Mitigated emissions assume that all off-road equipment and diesel generators have Tier 4 interim engines (Mitigation Measure M-AQ-1.1), all haul trucks are model year 2010 or newer (Mitigation Measure M-AQ-1.2), 90 percent of all architectural coatings have a maximum of 10 g VOC/l (Mitigation Measure M-AQ-1.3), and all construction barge engines have Tier 3 engines and all construction work boat engines are model year 2005 or newer (Mitigation Measure M-AQ-1.4). Does not include effect of Mitigation Measure M-AQ-1.5, which requires NOx offsets.

Source:

Refer to Table 4.G-8.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

Because construction-related emissions of NOx would remain significant even after implementation of Mitigation Measures M-AQ-1.1 through M-AQ-1.4, Mitigation Measure M-AQ-1.5 is identified to reduce residual NOx emissions. Pursuant to Mitigation Measure M-AQ-1.5 the project sponsor would be required to pay an offsite mitigation fee for NO_x emissions in excess of the BAAQMD thresholds. As specified in Mitigation Measure M-AQ-1.5, offsetting of construction emissions would follow completion of construction activities, and the mitigation offset fee has been determined based upon the amount of emissions estimated in the AQTR. The fee would fund offsite emissions reduction projects in an amount that would be adequate with respect to mitigating residual NOx construction pollutant emissions. The emissions offset fee is expressed in tons of ROG and NOx per year; therefore, with Mitigation Measures M-AQ-1.1 through M-AQ-1.4, it is estimated that the remaining construction emissions offset required would be a maximum of 1.8 tons per year for NOx (for year 2019; see table 4.G-9).

However, as described in Impact AQ-3 below, offset of operational emissions in combination with construction emissions required would be 10.5 tons per year (for year 2023; see table 4.G-16), which is greater than the amount estimated to be required for construction emissions offset. Therefore, emissions reduction projects funded through Mitigation Measure M-AQ-1.5 would offset the regional criteria pollutant emissions generated by construction of the proposed project that would remain in excess of the applicable thresholds after implementation of the project-specific emission reductions required under Mitigation Measures M-AQ-1.1 through M-AQ-1.4. The applicant shall also provide the additional offset fees as specified in Mitigation Measure M-AQ-1.5. Implementation of the emissions reduction project to be funded by the offset fees could be conducted by the BAAQMD; this would be outside the jurisdiction and control of the City and would not be fully within the control of the project sponsor. M-AQ-1.5 also allows the project sponsor to directly fund or implement an offset project; however, no such project has yet been identified. Therefore, the residual impact of construction emissions of criteria air pollutants is conservatively considered ***significant and unavoidable with mitigation***, acknowledging the assumption that the project sponsor would implement Mitigation Measures M-AQ-1.1 though M-AQ-1.5. 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.

HEALTH IMPLICATIONS OF SIGNIFICANT IMPACTS RELATED TO EMISSIONS OF OZONE PRECURSORS

ROG and NO_x are ozone precursors. The main health concern of exposure to ground-level ozone is the effect on the respiratory system, especially lung function. Several factors influence these health impacts, including the concentrations of ground-level ozone in the atmosphere, the duration of exposure, average volume of air breathed per minute, the length of intervals

between short-term exposures, and the sensitivity of the person to the exposure.[57,58] 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 SFBAAB, the worst case conditions for ozone formation occur in the summer and early fall on warm, windless, sunny days.[59]

Given these various factors, it is difficult to predict the magnitude of health effects from the project's exceedance of significance criteria for regional ROG and NOx. The increase in emissions associated with the proposed project represents a fraction of total SFBAAB regional ROG emissions (up to 15 pounds per day compared to 265 tons per day in the SFBAAB region in 2012)[60] and NOx emissions (up to 90 pounds per day compared to 318 tons per day in the SFBAAB region in 2012). Although Table 4.G-1, page 4.G-5, indicates that the most stringent applicable ozone standards were not exceeded at the San Francisco-Arkansas Street monitoring station between 2011 and 2015, the SFBAAB region experienced an average of 8.4 days of exceedance per year between 2011 and 2015.[61] The proposed project's ROG and NOx increases could contribute to new, or exacerbate existing, air quality violations in the SFBAAB region by contributing to ozone or resulting in AQI values that would be unhealthy for sensitive groups and others. As shown in Table 4.G-5, page 4.G-21, the SFBAAB averages between 2 and 3 days per year that are considered unhealthy for sensitive groups. It had no unhealthy (red) days in the last 6 years for which data are available. On unhealthy days, it is recommended that people avoid both prolonged and outdoor activities that call for heavy exertion.[62]

M-AQ-1.1: Off-Road Construction Equipment Emissions Minimization

> The project sponsor shall require all construction contractors to implement the following measures to reduce construction emissions.

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57 The World Bank Group. 1999. *Pollution Prevention and Abatement Handbook 1998: Toward Cleaner Production.* pp. 227–230. Available: www.ifc.org/wps/wcm/connect/dd7c9800488553e0b0b4f26a6515bb18/HandbookGroundLevelOzone.pdf?MOD=AJPERES. Accessed: January 19, 2016.

58 U.S. Environmental Protection Agency. 2008. *Air Quality Guide for Ozone.* March. Available: www.airnow.gov/index.cfm?action=pubs.aqiguideozone. Accessed: January 19, 2016.

59 Bay Area Air Quality Management District. n.d. *Air Pollutants Regulated by the Air District*. Available: http://hank.baaqmd.gov/dst/pollutants.htm. Accessed: January 19, 2016.

60 California Air Resources Board. 2014. *The California Almanac of Emissions and Air Quality – 2013 Edition.* May 21. Available: www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed: January 19, 2016.

61 Bay Area Air Quality Management District. 2014. *Annual Bay Area Air Quality Summaries*. Available: http://www.baaqmd.gov/about-air-quality/air-quality-summaries. Accessed: January 19, 2016.

62 U.S. Environmental Protection Agency. 2014. *Air Quality Index, A Guide to Air Quality and Your Health,* February 2014. Available: www.epa.gov/airnow/aqi_brochure_02_14.pdf. Accessed: January 19, 2016.

A. Engine Requirements

1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall have engines that meet or exceed either USEPA or ARB Tier 4 Interim off-road emissions standards. Tier 4 final equipment, which may be largely available in the Bay Area, may be used to comply with this requirement (since Tier 4 final engines must comply with a stricter standard than Tier 4 interim engines, Tier 4 final engines meet Tier 4 interim standards and thus comply with this requirement).

2. Where access to alternative sources of power are available, portable diesel engines shall be prohibited.

3. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than 2 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 2-minute idling limit.

4. The contractor shall instruct construction workers and equipment operators regarding the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturers' specifications.

B. Waivers

1. The Planning Department's Environmental Review Officer (ERO) or designee may waive the requirement for an alternative source of power from Subsection (A)(2) if an alternative source of power is limited or infeasible at the project site. If the ERO grants the waiver, the contractor must submit documentation that the equipment used for onsite power generation meets the requirements of Subsection (A)(1).

2. The ERO may waive the equipment requirements of Subsection (A)(1) if use of a particular piece of off-road equipment with a Tier 4 interim-compliant engine is not feasible or reasonable, the equipment would not produce the desired emissions reductions because of the expected operating modes, installation of the equipment would create a safety hazard or impair visibility for the operator, or there is a compelling emergency that requires use of off-road equipment that is not Tier 4 interim compliant. If seeking an exception, the project sponsor shall demonstrate to the ERO's satisfaction that the

resulting construction emissions would not exceed the health risk thresholds of significance for cancer risk and PM2.5 concentrations with respect to sensitive receptors, as identified within the EIR under Impact AQ-4. If the ERO grants the waiver, the contractor must use the next-cleanest piece of available off-road equipment, according to the table below.

3. Off-road Equipment Compliance Step-down Schedule

Compliance Alternative	Engine Emissions Standard	Emissions Control
1	Tier 3	ARB Level 2 VDECS
2	Tier 2	Alternative Fuel*

VDECS = Verified Diesel Emissions Control Strategies
* Alternative fuels are not a VDECS.

4. How to use the table: If the ERO determines that the equipment requirements cannot be met, then the project sponsor must attempt to meet Compliance Alternative 1. If the ERO determines that the contractor cannot supply off-road equipment that meets Compliance Alternative 1, then the contractor must meet Compliance Alternative 2.

C. *Construction Emissions Minimization Plan*. Before starting onsite 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 shall meet the requirements of Section A.

1. The 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, as such information is available, 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 VDECS installed, the description may include technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered an alternative fuel if it can be demonstrated to the Planning Department or the City's air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from the transport of fuel to the project site will not offset its NOx reduction potential.

2. The project sponsor shall ensure that all applicable requirements of the plan have been incorporated into the contract specifications. The plan shall include a certification statement, stating that the contractor agrees to comply fully with the plan.

3. The contractor shall make the 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 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 the start of construction, the contractor shall submit quarterly reports to the ERO, documenting compliance with the plan. After completion of construction activities but 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, the duration of each construction phase, and the specific information required in the plan.

M-AQ-1.2: On-Road Material Delivery and Haul Truck Construction Emissions Minimization

The project sponsor shall require all construction contractors to implement the following measures to reduce construction haul truck emissions.

A. Engine Requirements

1. The project sponsor shall also 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, and concrete trucks) be model year 2010 or newer.

B. Construction Emissions Minimization Plan. As part of the Construction Emissions Minimization Plan identified above for Mitigation Measure M-AQ-1.1, Section C, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.

1. The plan shall include estimates of the construction timeline by phase, with a description of how the on-road haul truck fleet required for every construction phase will comply with the engine requirements stated above. The plan shall also include expected fuel usage (or miles traveled) and hours of operation for the on-road haul truck fleet. For on-road trucks using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered an alternative fuel if it can

be demonstrated to the Planning Department or the City's air quality specialists that it is compatible with on-road truck engines and that emissions of ROG and NOx from the transport of fuel to the project site will not offset its NOx reduction potential.

2. See Mitigation Measure M-AQ-1.1 Section C, Part 2.

3. See Mitigation Measure M-AQ-1.1 Section C, Part 3.

C. *Monitoring*. See Mitigation Measure M-AQ-1.1, Section D.

M-AQ-1.3: Low-VOC Architectural Coatings

The project sponsor shall use low-VOC (i.e., ROG) coatings, beyond local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings), for at least 90 percent of all residential and nonresidential interior and exterior paints. This includes all architectural coatings applied during both construction and reapplications throughout the project's operational lifetime. At least 90 percent of coatings applied must meet the "super-compliant" VOC standard of less than 10 grams of VOC per liter of paint. After start of construction activities, the contractor shall submit quarterly reports to the ERO, documenting compliance with this measure by providing an inventory that lists the VOC content of all coatings purchased and applied during construction activities.

For reapplication of coatings during the project's operational lifetime, the Declaration of Covenants, Conditions, and Restrictions shall contain a stipulation for low-VOC coatings to be used. In addition, a list of potential coatings shall be provided. A list of "super-compliant" coatings can be found on the South Coast Air Quality Management District's website: http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings.

M-AQ-1.4: Best Available Control Technology for In-Water Construction Equipment

The project sponsor shall require all construction contractors to implement the following measures to reduce emissions from in-water equipment:

A. *Engine Requirements*

1. The project sponsor shall ensure that the construction barge shall have engines that meet or exceed USEPA marine engine Tier 3 emissions standards.

2. The project sponsor shall also ensure that the construction work boat engine shall be model year 2005 or newer or meet NOx and PM emissions standards for that model year.

B. *Construction Emissions Minimization Plan*. As part of the Construction Emissions Minimization Plan identified above for Mitigation Measure M-AQ-1.1, Section C, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.

1. The plan shall include estimates of the construction timeline by phase, with a description of how each piece of in-water equipment (e.g., barge engines, work boats) required for every construction phase will comply with the engine requirements stated above. The plan shall also include expected fuel usage and hours of operation for in-water equipment. For in-water equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered as an alternative fuel if it can be demonstrated to the Planning Department or City air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from the transport of fuel to the project site will not offset its NOx reduction potential.
2. See Mitigation Measure M-AQ-1.1, Section C, Part 2.
3. See Mitigation Measure M-AQ-1.1, Section C, Part 3.

C. *Monitoring*. See Mitigation Measure M-AQ-1.1, Section D.

M-AQ-1.5: Emissions Offsets for Construction and Operational Ozone Precursor Emissions

Prior to the estimated first year of exceedance of criteria air pollutant thresholds, the project sponsor, with oversight of the Planning Department, shall either:

1. Directly implement a specific offset project or program to achieve emission reductions of 10.5 tons ozone precursors to offset the combined emissions from construction and operations remaining above significance levels after implementation of identified mitigation measures. To qualify under this mitigation measure, the specific emissions reduction project must result in emissions reductions within the SFBAAB that are real, surplus, quantifiable, and enforceable and would not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement. Prior to implementation of the offset project, the project sponsor must obtain the Planning Department's approval of the proposed offset project by providing documentation of the estimated amount of emissions of ROG and NOx to be reduced (tons per year) within the SFBAAB from the emissions reduction project(s). The project sponsor shall notify the Planning Department within 6 months of completion of the offset project for Planning Department verification.

2. Pay a mitigation offset fee to the BAAQMD Bay Area Clean Air Foundation (Foundation) in an amount to be determined prior to the estimated first year of exceedance. The mitigation offset fee, currently estimated at approximately $18,030 per weighted ton, and not to exceed $35,000 per weighted ton of ozone precursors per year requiring emissions offsets plus an administrative fee of no more than 5 percent of the total offset to fund one or more emissions reduction projects within the SFBAAB. The fee will be determined by the Planning Department, the project sponsor, and the BAAQMD 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 totaling 10.5 tons of ozone precursors per year, the estimated maximum tonnage of operational and construction-related emissions offsets required to reduce emissions below significance levels after implementation of other identified mitigation measures. This total emissions offset amount was calculated by summing the maximum daily construction and operational emissions of ROG and NO_x (pounds/day), multiplying by 260 work days per year for construction and 365 days per year for operation, and converting to tons. The amount represents the total estimated operational and construction-related ROG and NOx emissions offsets required. Documentation of payment shall be provided to the Planning Department.

   Unless directly implementing a specific offset project (or program) as described above, the project sponsor would enter into a Memorandum of Understanding (MOU) with the BAAQMD Foundation. The MOU will include details regarding the funds to be paid, the administrative fee, and the timing of the emissions reductions project. Acceptance of this fee by the BAAQMD shall serve as acknowledgment and a commitment to (1) implement an emissions reduction project(s) within a time frame to be determined, based on the type of project(s) selected, after receipt of the mitigation fee to achieve the emissions reduction objectives specified above and (2) provide documentation to the Planning Department and the project sponsor describing the project(s) funded by the mitigation fee, including the amount of emissions of ROG and NOx reduced (tons per year) within the SFBAAB from the emissions reduction project(s). To qualify under this mitigation measure, the specific emissions reduction project must result in emission reductions within the SFBAAB that are real, surplus, quantifiable, and enforceable and would not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement.

Impact AQ-2. During project operations, the proposed project would result in emissions of criteria air pollutants 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. (Significant and Unavoidable with Mitigation)

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-access, visitor, delivery truck, waste management truck, and employee trips. Area sources include landscaping equipment, architectural coatings and the associated off-gassing during reapplication, and consumer products (e.g., solvents, cleaning supplies, cosmetics, toiletries). Stationary sources include emergency diesel generators and emissions from idling delivery vehicles. Energy sources include natural gas combustion for space and water heating. Each of these sources was taken into account in calculating the proposed project's long-term operational emissions.

Estimated operational emissions under project conditions (High Commercial and High Residential) are summarized in Tables 4.G-10 and 4.G-11 (summarized average daily emissions by year) on the following pages. As shown in Tables 4.G-10 and 4.G-11, project operational emissions would be below thresholds of significance for PM10 and PM2.5 and above the threshold of significance for ROG from 2021 to 2023 and each year thereafter and for NOx from 2023 and each year thereafter (for High Commercial only). At full buildout in 2024, operational emissions would total 118 to 120 pounds per day of ROG, which is 64 to 66 pounds per day over the threshold. At full buildout in 2024, operational emissions would total 56 to 60 pounds per day of NOx, which is 2 to 4 pounds per day over the threshold. This is a significant impact. Therefore, mitigation measures are required to reduce emissions.

As shown in the detailed tables in the AQTR, the majority of ROG emissions (59 and 61 percent for High Commercial and High Residential, respectively) are generated from area sources, including architectural coatings, consumer products, and landscaping. Of the area-source emissions, the majority of the ROG emissions (approximately 85 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 19 percent); the Pier 48 industrial use would be the third-highest source of ROG emissions (approximately 18 percent). The majority of NO_X emissions would be generated by emergency generators (26 and 29 percent for High Commercial and High Residential, respectively) and mobile sources (35 and 32 percent for High Commercial and High Residential, respectively) through gasoline combustion in vehicles during resident and visitor trips.

TABLE 4.G-10. SUMMARIZED AVERAGE DAILY AND ANNUAL OPERATIONAL EMISSIONS BY CATEGORY FOR HIGH COMMERCIAL

	Average Daily Emissions (lbs/day) [a]			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	50.6	24.9	9.4	3.2
2021	**88.1**	40.4	22.2	7.2
2022	**104.3**	48.3	26.6	8.8
2023	**118.3**	**59.9**	35.3	11.5
2024 (full buildout)	**118.1**	**57.4**	35.3	11.5
Significance Threshold	*54*	*54*	*82*	*54*
	Annual Emissions (tons/year)			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	9.2	4.3	1.7	0.6
2021	**16.1**	7.4	4.0	1.3
2022	**19.0**	8.8	4.9	1.6
2023	**21.6**	**10.9**	6.4	2.1
2024 (full buildout)	**21.6**	**10.5**	6.4	2.1
Significance Threshold	*10*	*10*	*15*	*10*

Notes:

[a] Emissions over threshold levels are in **bold.** Emissions assume the incorporation of project design features, including measures from the Sustainability Plan, and transportation demand management measures.

[b] PM10 and PM2.5 include both exhaust and dust emissions.

Sources:

1. California Air Resources Board. 2012. *Appendix B: Emissions Estimation Methodology for Commercial Harbor Craft Operating in California.* Available: http://www.arb.ca.gov/msei/chc-appendix-b-emission-estimates-ver02-27-2012.pdf.
2. Fehr & Peers. 2016. *Screencheck Draft – Transportation Impact Study: Mission Rock.* Seawall Lot 337/Pier 48. Prepared for the City and County of San Francisco Planning Department. July. San Francisco, CA.
3. U.S. Environmental Protection Agency. 1996. *Emissions Factors and AP 42.* Compilation of Air Pollutant Emission Factors, 9.12.1 Malt Beverages. Available: https://www3.epa.gov/ttnchie1/ap42/. Accessed: February 29, 2016.

Abbreviations:
ROG = reactive organic gases.
NOx = nitrogen oxides.
PM10 = particulate matter less than or equal to 10 microns in diameter.
PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.
lbs = pounds.

TABLE 4.G-11. SUMMARIZED AVERAGE DAILY AND ANNUAL OPERATIONAL EMISSIONS BY CATEGORY FOR HIGH RESIDENTIAL

	Average Daily Emissions (lbs/day) [a]			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	50.4	25.0	9.4	3.2
2021	**87.8**	40.4	22.1	7.2
2022	**104.0**	48.3	26.6	8.8
2023	**120.0**	**55.6**	29.9	10.0
2024 (full buildout)	**119.9**	53.2	29.9	9.9
Significance Threshold	*54*	*54*	*82*	*54*
	Annual Emissions (tons/year)			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	9.2	4.3	1.7	0.6
2021	**16.0**	7.4	4.0	1.3
2022	**19.0**	8.8	4.9	1.6
2023	**21.9**	**10.1**	5.5	1.8
2024 (full buildout)	**21.9**	9.7	5.5	1.8
Significance Threshold	*10*	*10*	*15*	*10*

Notes:

a. Emissions over threshold levels are in **bold.** Emissions assume the incorporation of project design features, including measures from the Sustainability Plan as well as the transportation demand management measures that are assumed to reduce estimated project trips by 20 percent.

b. PM10 and PM2.5 include both exhaust and dust emissions.

Sources:

Refer to Table 4.G-10.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

The increase in emissions associated with the proposed project represents less than 0.02 percent of total SFBAAB regional ROG emissions (118 to 120 pounds per day compared to 265 tons per day in the SFBAAB region in 2012).[63] Although Table 4.G-1, page 4.G-5, shows that the most stringent applicable ozone standards were not exceeded at the San Francisco-Arkansas Street monitoring station between 2010 and 2015, the SFBAAB region as a whole experienced an average of 9 days of exceedance per year between 2010 and 2015.[64] As discussed above under *Health Implications of Significant Impacts Related to Emissions of Ozone Precursors*, the ROG increase from the proposed project could contribute to an air quality violation in the SFBAAB region by contributing to more days of ozone exceedance or result in AQI values that would be unhealthy for sensitive groups and others. As shown in Table 4.G-5, page 4.G-21, the SFBAAB averaged between 0 and 3 days per year that were considered unhealthy for sensitive groups and 0 days that were considered unhealthy (red) in the last 6 years. On unhealthy days, it is recommended that people avoid both prolonged and heavy exertion in their outdoor activities.[65]

MITIGATION MEASURES. Project design features from the Sustainability Plan, including building energy efficiency measures, are included in the mitigated scenario, reducing ROG and NO_x emissions by approximately 7 percent.

Mitigation Measure M-AQ-1.3 requires 90 percent of all architectural coatings to have a maximum of 10 grams of VOC per liter, reducing coating ROG emissions by 68–72 percent. Mitigation Measure M-AQ-2.1 requires use of recent-year emergency diesel generators. Mitigation Measure M-AQ-2.2 would require the project sponsor to educate residential tenants and encourage commercial tenants to purchase products that are safer and better for the environment. However, given the project sponsor does not have authority to require use of certain products, no reduction in ROG emissions can be attributed to this measure. Mitigation Measure M-AQ-2.3 would require a Transportation Demand Management (TDM) Plan with a goal of reducing estimated one-way vehicle trips by 20 percent and mobile-source ROG and NO_x emissions by 20 percent.

Tables 4.G-12 and 4.G-13 (average daily emissions by year) on the following pages summarize operational emissions with implementation of measures to reduce project impacts. As shown, with incorporation of Mitigation Measures M-AQ-1.3, M-AQ-2.1, M-AQ-2.2, and M-AQ-2.3, operational ROG emissions would remain in excess of the BAAQMD's thresholds of significance from 2021 to full buildout and in each operational year thereafter for the life of the project. Because operational emissions of ROG would remain significant, even after implementation of Mitigation Measures M-AQ-1.3, M-AQ-2.1, M-AQ-2.2, and M-AQ-2.3,

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63 California Air Resources Board. 2014. *The California Almanac of Emissions and Air Quality – 2013 Edition*. Available: www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed: August 12, 2016.

64 Bay Area Air Quality Management District. 2014. *Annual Bay Area Air Quality Summaries*. Available: http://www.baaqmd.gov/about-air-quality/air-quality-summaries. Accessed: August 12, 2016.

65 U.S. Environmental Protection Agency. 2014. *Air Quality Index, A Guide to Air Quality and Your Health*. Available: www.epa.gov/airnow/aqi_brochure_02_14.pdf. Accessed: August 12, 2016.

TABLE 4.G-12. SUMMARIZED MITIGATED AVERAGE DAILY AND ANNUAL OPERATIONAL EMISSIONS BY CATEGORY FOR HIGH COMMERCIAL (EXCLUDING OFFSETS)

	Average Daily Emissions (lbs/day) [a]			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	46.1	23.6	7.7	2.6
2021	**79.8**	37.1	18.2	5.9
2022	**93.9**	44.4	21.9	7.1
2023	**105.8**	**54.9**	29.0	9.3
2024 (full buildout)	**105.6**	52.5	29.0	9.3
Significance Threshold	*54*	*54*	*82*	*54*
	Annual Emissions (tons/year)			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	8.4	4.0	1.4	0.5
2021	**14.6**	6.8	3.3	1.1
2022	**17.1**	8.1	4.0	1.3
2023	**19.3**	**10.0**	5.3	1.7
2024 (full buildout)	**19.3**	9.6	5.3	1.7
Significance Threshold	*10*	*10*	*15*	*10*

Notes:

a. Emissions over threshold levels are in **bold.** Mitigated emissions assume the incorporation of project design features, which are part of the proposed project, including measures from the Sustainability Plan as well as the transportation demand management measures that are assumed to reduce estimated project trips by 20 percent (Mitigation Measure M-AQ-2.3); all operational emergency generators have model year 2008 or newer engines, consistent with ARB ATCM emission rates that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1); and 90 percent of all architectural coatings have a maximum of 10 g VOC/l (Mitigation Measure M-AQ-1.3). Does not include effect of Mitigation Measure M-AQ-1.5, which requires ROG and NOx offsets.

b. PM10 and PM2.5 include both exhaust and dust emissions.

Sources:

Refer to Table 4.G-10.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

TABLE 4.G-13. SUMMARIZED MITIGATED AVERAGE DAILY AND ANNUAL OPERATIONAL EMISSIONS BY CATEGORY FOR HIGH RESIDENTIAL (EXCLUDING OFFSETS)

	Average Daily Emissions (lbs/day) [a]			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	46.0	23.5	7.7	2.6
2021	**79.5**	37.1	18.2	5.9
2022	**93.8**	44.3	21.8	7.1
2023	**107.3**	51.2	24.6	8.1
2024 (full buildout)	**107.1**	48.8	24.5	8.0
Significance Threshold	*54*	*54*	*82*	*54*
	Annual Emissions (tons/year)			
Year	**ROG**	**NOx**	**PM10 Total [b]**	**PM2.5 Total [b]**
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0
2020	8.4	4.0	1.4	0.5
2021	**14.5**	6.8	3.3	1.1
2022	**17.1**	8.1	4.0	1.3
2023	**19.6**	9.3	4.5	1.5
2024 (full buildout)	**19.5**	8.9	4.5	1.5
Significance Threshold	*10*	*10*	*15*	*10*

Notes:

a. Emissions over threshold levels are in **bold.** Mitigated **e**missions assume incorporation of project design features, which are part of the proposed project, including measures from the Sustainability Plan as well as the transportation demand management measures that are assumed to reduce estimated project trips by 20 percent (Mitigation Measure M-AQ-2.3); all operational emergency generators have model year 2008 or newer engines, consistent with ARB ATCM emission rates that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1); and 90 percent of all architectural coatings have a maximum of 10 g VOC/l (Mitigation Measure M-AQ-1.3). Does not include effect of Mitigation Measure M-AQ-1.5, which requires ROG and NOx offsets.

b. PM10 and PM2.5 include both exhaust and dust emissions.

Sources:

Refer to Table 4.G-10.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

Mitigation Measure M-AQ-1.5 is identified to reduce residual ROG and NOx emissions. Pursuant to Mitigation Measure M-AQ-1.5, the project sponsor would be required to pay an offsite mitigation fee for ROG and NOx emissions in excess of the BAAQMD thresholds. The fee would fund offsite emissions reduction projects in an amount that would be adequate with respect to mitigating residual ROG and NOx operational pollutant emissions. The emissions offset fee is expressed in estimated tons of ROG and NOx per year that would not be mitigated with implementation of Mitigation Measures M-AQ-1.3, M-AQ-2.1, M-AQ-2.2, and M-AQ-2.3; therefore, it is estimated that the remaining operational emissions offset required would be a maximum of 9.5 tons per year of ROG plus NOx (for year 2024; see table 4.G-13). However, as described in Impact AQ-3 below, offset of operational emissions in combination with construction emissions required would also be 10.5 tons per year (for year 2023; see table 4.G-16). Therefore, emissions reduction projects funded through Mitigation Measure M-AQ-1.5 would offset the regional criteria pollutant emissions generated by operation of the proposed project that would remain in excess of the applicable thresholds after implementation of the project-specific emission reductions required under Mitigation Measures M-AQ-1.1 through M-AQ-1.4. Implementation of the emissions reduction project could be conducted by the BAAQMD; this would be outside the jurisdiction and control of the City and would not be fully within the control of the project sponsor. M-AQ-1.5 also allows the project sponsor to directly fund or implement an offset project; however, no such project has yet been identified. Therefore, the residual impact of operational criteria air pollutant emissions is conservatively considered ***significant and unavoidable with mitigation***.

M-AQ-2.1: Best Available Control Technology for Operational Diesel Generators

> The project sponsor shall ensure that the operational backup diesel generators comply with the following: (1) ARB Airborne Toxic Control Measure (ATCM) emissions standards for model year 2008 or newer engines; and (2) meet or exceed one of the following emission standards for particulate matter: (A) Tier 4 interim certified engine or (B) Tier 2 or Tier 3 certified engine that is equipped with an ARB Level 3 VDECS. A nonverified diesel emissions control strategy may be used if the filter has the same particulate matter reduction as the identical ARB-verified model and BAAQMD approves of its use. The project sponsor shall submit documentation of compliance with the BAAQMD NSR permitting process (Regulation 2, Rule 2, and Regulation 2, Rule 5) and the emissions standard requirement of this measure to the Planning Department for review and approval prior to issuance of a permit for a backup diesel generator from any City agency.

M-AQ-2.2: Reactive Organic Gases Emissions Reduction Measures

> To reduce ROG emissions associated with the project, the project sponsor shall provide education for residential and commercial tenants to help reduce area source (e.g., architectural coatings, consumer products, and landscaping) emissions

associated with residential and building operations. Prior to receipt of any building permit and every 5 years thereafter, the project sponsor shall work with the San Francisco Department of Environment to develop electronic correspondence, which will be distributed by email annually to tenants of the project that encourages the purchase of consumer products that are better for the environment and generate fewer VOC emissions. The correspondence shall encourage environmentally preferable purchasing and include contact information and links to SF APPROVED. While microbreweries do not typically implement emission control devices, to further reduce ROG (primarily ethanol) emissions associated with Pier 48 industrial operations, the project sponsor shall implement technologies to reduce ethanol emissions if available and practicable. Such measures could include wet scrubbers, ethanol recovery and capture (e.g., carbon absorption) or incineration.

M-AQ-2.3: Transportation Demand Management

The project sponsors shall prepare and implement a Transportation Demand Management (TDM) Plan. The TDM Plan shall have a goal of reducing estimated aggregate daily one-way vehicle trips by 20 percent compared to the aggregate daily one-way vehicle trips identified in the project's travel demand memo, prepared by Adavant Consulting, dated June 30, 2015 ("Travel Demand Memo"), and attached as Appendix 4-4 to the Draft EIR. The project sponsors shall be responsible for monitoring implementation of the TDM Plan and proposing adjustments to the TDM Plan if its goal is not being achieved, in accordance with the following provisions.

The TDM Plan may include, but is not limited to, the types of measures summarized below by way of example. TDM Plan measures shall generally be consistent with the City's adopted TDM Program Standards and the draft proposed TDM Plan prepared by Nelson Nygaard, dated September 2016, and attached as Appendix 4-5 to the Draft EIR. The TDM Plan describes the scope and applicability of candidate measures in detail, and may include, for example:

- Active Transportation: Provision of streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bike share memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services;
- Car-Share: Provision of car-share parking spaces and subsidized memberships for project occupants;
- Delivery: Provision of amenities and services to support delivery of goods to project occupants;

- Family-Oriented Measures: Provision of on-site childcare and other amenities to support the use of sustainable transportation modes by families;
- High-Occupancy Vehicles: Provision of carpooling/vanpooling incentives and shuttle bus service;
- Information and Communications: Provision of multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services;
- Land Use: Provision of on-site affordable housing and healthy food retail services in underserved areas;
- Parking: Provision of unbundled parking, short-term daily parking provision, parking cash out offers, and reduced off-street parking supply.

The TDM Plan shall describe each measure, including the degree of implementation (e.g., how long will it be in place, how many tenants or visitors it will benefit, on which locations within the site it will be placed, etc.) and the population that each measure is intended to serve (e.g., residential tenants, retail visitors, employees of tenants, visitors). The TDM Plan shall commit to monitoring vehicle trips to and from the project site to determine the TDM Plan's effectiveness, as required by *TDM Plan Monitoring and Reporting* outlined below.

The TDM Plan shall have been approved by the Planning Department prior to site permit application for the first building and the TDM Plan shall be implemented as to each new building upon the issuance of the certificate of occupancy for that building.

The TDM Plan shall remain a component of the proposed project to be implemented for the duration of the project.

TDM Plan Monitoring and Reporting: the TDM Coordinator shall collect data, prepare monitoring reports and submit them to the Planning Department. To ensure the goal of reducing by 20 percent the aggregate daily one-way vehicle trips is reasonably achievable, the project sponsor shall monitor daily one-way vehicles trips for all buildings that have received a Certificate of Occupancy, and compare these vehicle trips to the aggregate daily one-way vehicle trips anticipated for the those buildings based on the trip generation rates contained within the proposed project Travel Demand Memo.

- **Timing:** The TDM Coordinator shall collect monitoring data and shall begin submitting monitoring reports to the Planning Department beginning 18 months after the completion and commencement of operation of the proposed garage on Block D. Thereafter, annual monitoring reports shall be submitted (referred to as

"reporting periods") until five consecutive reporting periods show that the project has met the reduction goal, at which point monitoring data shall be submitted to the Planning Department once every 3 years. The project sponsor shall complete each trip count and survey (see below for description) within 30 days following the end of the applicable reporting period. Each monitoring report shall be completed within 90 days following the applicable reporting period. The project sponsor shall modify the timing of monitoring reports such that a new monitoring report is submitted 12 months after adjustments are made to the TDM Plan in order to meet the reduction goal, as may be required under the "TDM Plan Adjustments" heading, below. In addition, the Planning Department may modify the timing of monitoring reports as needed to consolidate this requirement with other monitoring and/or reporting requirements for the project, such as annual reporting under the proposed project Development Agreement.

- **Term:** The Project Sponsor shall monitor, submit monitoring reports, and make plan adjustments as provided below until the earlier of: (i) the expiration of the Development Agreement, or (ii) the reduction goal has been met for up to eight consecutive reporting periods as determined by the Planning Department. Notwithstanding the foregoing or any other provision of this mitigation measure, all obligations for monitoring, reporting and for making adjustments to the TDM Plan shall terminate if the project sponsor has paid and/or made a commitment to pay the offset fee for any shortfall in the TDM Plan's meeting the reduction goal as provided below.
- **Components:** The monitoring and reporting, including trip counts, surveys and travel demand information, shall include the following components or comparable alternative methodology and components, as approved, accepted or provided by Planning Department staff:
    - Trip Count and Intercept Survey: Provide a site-wide trip count and intercept survey of persons and vehicles arriving and leaving the project site, other than on AT&T Park ballgame or other major event (e.g., concert or other event substantially occupying the capacity of AT&T Park) days or hours, for no less than two days during the reporting period between 6:00 a.m. and 8:00 p.m. One day shall be a Tuesday, Wednesday, or Thursday during one week without federally recognized holidays, and another day shall be a Tuesday, Wednesday, or Thursday during another week without federally recognized holidays. The trip count and intercept survey shall be prepared by a qualified transportation or survey consultant, and the Planning Department shall approve the methodology prior to the Project Sponsors conducting the

components of the trip count and intercept survey. The Planning Department anticipates it will have a standard trip count and intercept survey methodology developed and available to project sponsors at the time of data collection.

- Travel Demand Information: The above trip count and survey information shall be able to provide the travel demand analysis characteristics (work and non-work trip counts, origins and destinations of trips to/from the project site, and modal split information), as outlined in the Planning Department's *Transportation Impact Analysis Guidelines for Environmental Review*, October 2002, or subsequent updates in effect at the time of the survey.
- Documentation of Plan Implementation: The TDM coordinator shall work in conjunction with the Planning Department to develop a survey (online or paper) that can be reasonably completed by the TDM coordinator and/or Transportation Management Association (TMA) staff members to document implementation of TDM program elements and other basic information during the reporting period. The project sponsors shall include this survey in the monitoring report submitted to the Planning Department.
- Assistance and Confidentiality: The Planning Department will assist the TDM coordinator with questions regarding the components of the monitoring report and will assist the TDM coordinator in determining ways to protect the identity of individual survey responders.

TDM Plan Adjustments. The project sponsors shall adjust the TDM Plan according to the monitoring results if three consecutive reporting periods demonstrate that measures within the TDM Plan are not achieving the reduction goal. The TDM Plan adjustments shall be made in consultation with the Planning Department and may require refinements to existing measures (e.g., changes to subsidies, increased bicycle parking), inclusion of new measures (e.g., a new technology or project operational changes not inconsistent with any agreements with the Port), or removal of existing measures (e.g., measures that are ineffective or induce vehicle trips).[66] If three consecutive reporting periods' monitoring results demonstrate that measures within the TDM Plan are not achieving the reduction goal, the project sponsors shall propose TDM Plan adjustments to be incorporated in the TDM Plan within 270 days following the last reporting period. The project sponsors shall implement the TDM Plan adjustments until the results of three consecutive reporting periods demonstrate that the reduction goal is being achieved.

[66] No parking-related restrictive measures on the project site shall by design or effect, restrict parking on the project site for patrons of AT&T ballpark games or events.

If after implementing TDM Plan adjustments as described above, and the project sponsors have not met the reduction goal for up to eight consecutive reporting periods, as determined by the Planning Department, the project sponsors may, at any time thereafter, elect to address the shortfall in meeting the TDM Plan reduction target by, in addition to paying the emission offset fees set forth in Mitigation Measure M-AQ-1.5, also paying an additional offset fee in accordance with Mitigation Measure M-AQ-1.5, in the amount required to address, both the shortfall in reduction during the previously monitored years and the anticipated shortfall in the remaining expected years of project operations, the latter of which shall be based on the shortfall that occurred in the most recently monitored year. Calculations of emissions to be offset shall be based on the total amount of emissions anticipated to be reduced by achieving the 20 percent TDM goal adjusted for the actual percentage of aggregate daily one-way vehicle trip reduction achieved in the most recently monitored year.

Impact AQ-3. During combined project construction and operations, the proposed project would result in emissions of criteria air pollutants 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. (Significant and Unavoidable with Mitigation)

As discussed above, construction would occur in phases, beginning with Area 1 in about 2017. It is conservatively estimated that operational emissions could begin immediately following construction of each area. Accordingly, concurrent construction and operational activities would occur, resulting in higher daily and annual emissions than either construction or operational emissions when analyzed separately.

Tables 4.G-14 and 4.G-15 on the following pages summarize estimated construction emissions combined with estimated operational emissions. As shown in these tables, project construction plus operational emissions would be above the BAAQMD's threshold of significance for ROG from 2019 to 2024 and NO_x from 2018 to 2023.

As discussed above under *Health Implications of Significant Impacts Related to Emissions of Ozone Precursors*, the ROG and NOx increase from the proposed project could contribute to an air quality violation in the SFBAAB region by contributing to more days of ozone exceedance or resulting in AQI values that would be unhealthy for sensitive groups and others. As shown in Table 4.G-5, page 4.G-21, the SFBAAB averaged between 0 and 3 days per year that were considered unhealthy for sensitive groups and 0 days that were considered unhealthy (red) in the last 6 years. On unhealthy days, it is recommended that people avoid both prolonged and heavy exertion in their outdoor activities.[67]

[67] U.S. Environmental Protection Agency. 2014. *Air Quality Index, A Guide to Air Quality and Your Health*. Available: www.epa.gov/airnow/aqi_brochure_02_14.pdf. Accessed: August 12, 2016.

TABLE 4.G-14. SUMMARIZED AVERAGE DAILY AND ANNUAL CONSTRUCTION PLUS OPERATIONAL EMISSIONS FOR HIGH COMMERCIAL

	Average Daily Emissions (lbs/day)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total
2017	2.0	22.7	0.8	0.0	0.8	0.7	0.0	0.7
2018	37.3	**123.9**	5.3	0.0	5.3	5.1	0.0	5.1
2019	**65.6**	**155.8**	6.6	0.0	6.6	6.3	0.0	6.3
2020	**100.8**	**151.8**	5.7	8.6	14.3	5.5	2.5	8.0
2021	**122.4**	**109.5**	3.8	20.9	24.6	3.6	6.0	9.6
2022	**122.1**	**71.7**	2.5	25.0	27.5	2.5	7.2	9.6
2023	**122.7**	**65.7**	2.2	33.3	35.5	2.2	9.5	11.7
2024	**118.1**	**57.4**	2.0	33.3	35.3	1.9	9.5	11.5
Significance Threshold	*54*	*54*	*82*	*82*	*82*	*54*	*54*	*54*
	Annual Emissions (tons/year)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total
2017	0.3	2.9	<0.1	0.0	<0.1	<0.1	0.0	<0.1
2018	4.8	**16.1**	0.7	0.0	0.7	0.7	0.0	0.7
2019	8.6	**20.3**	0.9	0.0	0.9	0.8	0.0	0.8
2020	**15.6**	**19.2**	0.7	1.6	2.3	0.7	0.4	1.1
2021	**20.6**	**16.4**	0.6	3.8	4.4	0.5	1.1	1.6
2022	**21.4**	**11.9**	0.4	4.6	5.0	0.4	1.3	1.7
2023	**22.2**	**11.7**	0.4	6.1	6.5	0.4	1.7	2.1
2024	**21.6**	**10.5**	0.4	6.1	6.4	0.4	1.7	2.1
Significance Threshold	*10*	*10*	*15*	-	*15*	*10*	-	*10*

Notes:

a. Emissions over threshold levels are in **bold**.

b. PM10 and PM2.5 dust only includes dust from operations; construction dust is not included.

c. PM10 and PM2.5 total includes exhaust from both construction and operations and dust from operations only.

Sources:

Refer to Tables 4.G-8 and 4.G-10.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

TABLE 4.G-15. SUMMARIZED AVERAGE DAILY AND ANNUAL CONSTRUCTION PLUS OPERATIONAL EMISSIONS FOR HIGH RESIDENTIAL

	Average Daily Emissions (lbs/day)							
Year	**ROG**	**NOx**	**PM10 Exhaust**	**PM10 Dust [a]**	**PM10 Total [b]**	**PM2.5 Exhaust**	**PM2.5 Dust [a]**	**PM2.5 Total**
2017	2.0	22.7	0.8	0.0	0.8	0.7	0.0	0.7
2018	37.3	**123.9**	5.3	0.0	5.3	5.1	0.0	5.1
2019	**65.6**	**155.8**	6.6	0.0	6.6	6.3	0.0	6.3
2020	**100.7**	**151.8**	5.7	8.6	14.3	5.5	2.5	8.0
2021	**122.1**	**109.5**	3.8	20.8	24.6	3.6	6.0	9.6
2022	**121.8**	**71.7**	2.5	24.9	27.5	2.5	7.1	9.6
2023	**124.4**	**61.5**	2.2	27.9	30.1	2.2	8.0	10.2
2024	**119.9**	53.2	2.0	27.9	29.9	1.9	8.0	9.9
Significance Threshold	*54*	*54*	*82*	*82*	*82*	*54*	*54*	*54*
	Annual Emissions (tons/year)							
Year	**ROG**	**NOx**	**PM10 Exhaust**	**PM10 Dust [a]**	**PM10 Total [b]**	**PM2.5 Exhaust**	**PM2.5 Dust [a]**	**PM2.5 Total**
2017	0.3	2.9	<0.1	0.0	<0.1	<0.1	0.0	<0.1
2018	4.8	**16.1**	0.7	0.0	0.7	0.7	0.0	0.7
2019	8.6	**20.3**	0.9	0.0	0.9	0.8	0.0	0.8
2020	**15.6**	**19.2**	0.7	1.6	2.3	0.7	0.4	1.1
2021	**20.5**	**16.4**	0.6	3.8	4.4	0.5	1.1	1.6
2022	**21.3**	**11.9**	0.4	4.6	5.0	0.4	1.3	1.7
2023	**22.5**	**10.9**	0.4	5.1	5.5	0.4	1.5	1.8
2024	**21.9**	9.7	0.4	5.1	5.5	0.4	1.5	1.8
Significance Threshold	*10*	*10*	*15*	*-*	*15*	*10*	*-*	*10*

Notes:

a. Emissions over threshold levels are in **bold.**

b. PM10 and PM2.5 dust only includes dust from operations; construction dust is not included.

c. PM10 and PM2.5 total includes exhaust from both construction and operations and dust from operations only.

Sources:

Refer to Tables 4.G-8 and 4.G-11.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

Table 4.G-16, below, and Table 4.G-17, page 4.G-72, summarize estimated mitigated construction emissions after the incorporation of Mitigation Measures M-AQ-1.1 through M-AQ-1.4 combined with estimated mitigated operational emissions after the incorporation of Mitigation Measure M-AQ-2.1, M-AQ-2.2, and M-AQ-2.3. As shown in these tables, mitigated project construction plus operational emissions would be above the BAAQMD's threshold of significance for ROG from 2020 to 2024 and NOx from 2018 to 2022, depending on the operational scenario.

TABLE 4.G-16. SUMMARIZED MITIGATED AVERAGE DAILY AND ANNUAL CONSTRUCTION PLUS OPERATIONAL EMISSIONS FOR HIGH COMMERCIAL (EXCLUDING OFFSETS)

	Average Daily Emissions (lbs/day)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total
2017	0.7	8.4	<0.1	0.0	<0.1	<0.1	0.0	<0.1
2018	10.9	**63.0**	1.0	0.0	1.0	1.0	0.0	1.0
2019	18.5	**90.5**	1.3	0.0	1.3	1.3	0.0	1.3
2020	**60.8**	**104.0**	1.8	7.2	9.0	1.8	2.1	3.8
2021	**89.2**	**88.9**	1.6	17.3	18.9	1.6	4.9	6.5
2022	**98.6**	**63.8**	1.4	20.7	22.1	1.4	5.9	7.3
2023	**107.0**	**60.0**	1.5	27.6	29.1	1.5	7.9	9.4
2024	**105.6**	52.5	1.4	27.6	29.0	1.4	7.9	9.3
Significance Threshold	*54*	*54*	*82*	*82*	*82*	*54*	*54*	*54*
	Annual Emissions (tons/year)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total
2017	<0.1	1.1	<0.1	0.0	<0.1	<0.1	0.0	<0.1
2018	1.4	8.2	0.1	0.0	0.1	0.1	0.0	0.1
2019	2.4	**11.8**	0.2	0.0	0.2	0.2	0.0	0.2
2020	**10.3**	**13.8**	0.2	1.3	1.5	0.2	0.4	0.6
2021	**15.8**	**13.5**	0.3	3.1	3.4	0.3	0.9	1.2
2022	**17.8**	**10.6**	0.2	3.8	4.0	0.2	1.1	1.3
2023	**19.5**	**10.7**	0.3	5.0	5.3	0.3	1.4	1.7
2024	**19.3**	9.6	0.3	5.0	5.3	0.2	1.4	1.7
Significance Threshold	*10*	*10*	*15*	-	*15*	*10*	-	*10*

Notes:

[a] Emissions over threshold levels are in **bold.** Mitigated emissions assume that all off-road equipment and diesel generators have Tier 4 interim engines (Mitigation Measure M-AQ-1.1); all haul trucks are model year 2010 or newer (Mitigation Measure M-AQ-1.2); 90 percent of all architectural coatings have a maximum of 10 g VOC/l (Mitigation Measure M-AQ-1.3); all construction barge engines have Tier 3 engines and all construction work boat engines are model year 2005 or newer (Mitigation Measure M-AQ-1.4); all operational emergency generators have model year 2008 or newer engines, consistent with ARB ATCM emission rates

	Average Daily Emissions (lbs/day)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total

that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1); and auto vehicle trips are reduced by 20 percent through the TDM plan (Mitigation Measure M-AQ-2.3). Does not include effect of Mitigation Measure M-AQ-1.5, which requires ROG and NOx offsets.

b. PM10 and PM2.5 dust only includes dust from operations; construction dust is not included.

c. PM10 and PM2.5 total includes exhaust from both construction and operations and dust from operations only.

Sources:

Refer to Tables 4.G-9 and 4.G-12.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

TABLE 4.G-17. SUMMARIZED MITIGATED AVERAGE DAILY AND ANNUAL CONSTRUCTION PLUS OPERATIONAL EMISSIONS FOR HIGH RESIDENTIAL (EXCLUDING OFFSETS)

	Average Daily Emissions (lbs/day)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total
2017	0.7	8.4	<0.1	0.0	<0.1	<0.1	0.0	<0.1
2018	10.9	**63.0**	1.0	0.0	1.0	1.0	0.0	1.0
2019	18.5	**90.5**	1.3	0.0	1.3	1.3	0.0	1.3
2020	**60.7**	**104.0**	1.8	7.2	9.0	1.8	2.1	3.8
2021	**88.9**	**88.8**	1.6	17.2	18.8	1.6	4.9	6.5
2022	**98.4**	**63.7**	1.4	20.7	22.1	1.4	5.9	7.3
2023	**108.4**	**56.3**	1.5	23.1	24.7	1.5	6.6	8.1
2024	**107.1**	48.8	1.4	23.1	24.5	1.4	6.6	8.0
Significance Threshold	*54*	*54*	*82*	*82*	*82*	*54*	*54*	*54*
	Annual Emissions (tons/year)							
Year	ROG	NOx	PM10 Exhaust	PM10 Dust [a]	PM10 Total [b]	PM2.5 Exhaust	PM2.5 Dust [a]	PM2.5 Total
2017	<0.1	1.1	<0.1	0.0	<0.1	<0.1	0.0	<0.1
2018	1.4	8.2	0.1	0.0	0.1	0.1	0.0	0.1
2019	2.4	**11.8**	0.2	0.0	0.2	0.2	0.0	0.2
2020	**10.2**	**13.8**	0.2	1.3	1.5	0.2	0.4	0.6
2021	**15.8**	**13.5**	0.3	3.1	3.4	0.3	0.9	1.2
2022	**17.7**	**10.6**	0.2	3.8	4.0	0.2	1.1	1.3
2023	**19.7**	**10.0**	0.3	4.2	4.5	0.3	1.2	1.5
2024	**19.5**	8.9	0.3	4.2	4.5	0.3	1.2	1.5
Significance Threshold	*10*	*10*	*15*	-	*15*	*10*	-	*10*

Notes:

a. Emissions over threshold levels are in **bold.** Mitigated emissions assume that all off-road equipment and diesel generators have Tier 4 interim engines (Mitigation Measure M-AQ-1.1); all haul trucks are model year 2010 or newer (Mitigation Measure M-AQ-1.2); 90 percent of all architectural coatings have a maximum of 10 g VOC/l (Mitigation Measure M-AQ-1.3); all construction barge engines have Tier 3 engines; all construction work boat engines are model year 2005 or newer (Mitigation Measure M-AQ-1.4); all operational emergency generators have model year 2008 or newer engines, consistent with ARB ATCM emission rates that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1); and auto vehicle trips are reduced by 20 percent through the TDM plan (Mitigation Measure M-AQ-2.3). Does not include effect of Mitigation Measure M-AQ-1.5, which requires ROG and NOx offsets.

b. PM10 and PM2.5 dust only includes dust from operations; construction dust is not included.

c. PM10 and PM2.5 total includes exhaust from both construction and operations and dust from operations only.

Sources:

Refer to Tables 4.G-9 and 4.G-13.

Abbreviations:

ROG = reactive organic gases.

NOx = nitrogen oxides.

PM10 = particulate matter less than or equal to 10 microns in diameter.

PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

lbs = pounds.

Because construction plus operational emissions of ROG and NOx would remain significant even after implementation of Mitigation Measures M-AQ-1.1 through M-AQ-1.4, M-AQ-2.1, and M-AQ-2.2, Mitigation Measure M-AQ-1.5 is identified to reduce residual ROG and NOx emissions. Pursuant to Mitigation Measures M-AQ-1.5, the project sponsor would be required to pay offsite mitigation fees for ROG and NOx emissions in excess of the BAAQMD thresholds. The fee would fund offsite emissions reduction projects in an amount that would be adequate with respect to mitigating residual ROG plus NOx emissions from both construction and operation combined. The emissions offset is expressed in estimated tons of ROG and NOx per year that would not be mitigated with implementation of Mitigation Measures M-AQ-1.1 through M-AQ-1.4 (for construction emissions) and M-AQ-1.3, M-AQ-2.1, M-AQ-2.2, and M-AQ-2.3 (for operational emissions). Under compliance with these mitigation measures, it is estimated that the remaining operational plus construction emissions offset required would be a maximum of 10.5 tons per year of ROG plus NOx (for year 2023; see table 4.G-16). Implementation of the emissions reduction project could be conducted by the BAAQMD; this would be is outside the jurisdiction and control of the City and would not be fully within the control of the project sponsor. M-AQ-1.5 also allows the project sponsor to directly fund or implement an offset project; however, no such project has yet been identified. Therefore, the residual impact of construction plus operational criteria air pollutant emissions is conservatively considered ***significant and unavoidable with mitigation.***

Impact AQ-4. Construction and operation of the proposed project would generate toxic air contaminants, including diesel particulate matter, and could expose sensitive receptors to substantial air pollutant concentrations. (Less than Significant With Mitigation)

EXPOSURE TO PM2.5

Proposed project construction and operation would generate PM2.5 emissions, resulting in the exposure of nearby existing sensitive receptors to increased PM2.5 concentrations. Similarly, new residents and children in potential day care centers who may occupy the project site prior to completion of the entire project may be exposed to a portion of the construction and operational PM2.5 emissions. As noted above, because the residential exposure assumptions are more conservative than those for other sensitive receptor types (such as hospitals, schools, and day care facilities), a conservative approach that considers all sensitive receptors to be residential receptors was used in this analysis.

OFFSITE AND ONSITE MIRS IN APEZ UNDER EXISTING CONDITIONS

For offsite MIRs in the study area that are currently located in the APEZ under existing or future 2025 conditions, the maximum modeled proposed project annual average PM2.5 concentrations under proposed project conditions is 0.1 $\mu g/m^3$ (for combined construction plus operational emissions). This does not exceed the project contribution threshold of 0.2 $\mu g/m^3$ for receptors within the APEZ. There are currently no onsite MIRs in the study area that are

currently located in the APEZ under existing conditions. As such, these risks are not presented in the tables below. Therefore, the impact from the project on onsite and offsite MIRs that are currently located in the APEZ under existing or future 2025 conditions would be ***less than significant***.

OFFSITE AND ONSITE MIRS NOT IN APEZ UNDER EXISTING CONDITIONS

For onsite MIRs in the study area currently outside the APEZ under existing or future 2025 conditions but that would be located in the APEZ under existing/future plus proposed project conditions, the maximum modeled annual-average PM2.5 exhaust concentrations under proposed project conditions during construction is 2.3 μg/m^3. This exceeds the project contribution threshold of 0.3 μg/m^3. This is considered a significant impact. Therefore, mitigation is required to reduce this impact. There are no receptors currently outside the APEZ under existing or future 2025 conditions that would be placed in the APEZ under existing/future plus proposed project conditions solely because of operational emissions; therefore, these operational and construction-plus-operational concentrations are omitted from Table 4.G-18 on the following page. There are currently no offsite MIRs in the study area currently outside the APEZ under existing or future 2025 conditions but that would be located in the APEZ under existing or future 2025 plus proposed project condition during construction or operation.

MITIGATION MEASURES. As shown in Table 4.G-16, page 4.G-70, Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, and M-AQ-2.1 would reduce PM2.5 exhaust concentrations to 0.3 μg/m^3 for the onsite MIR, which would not exceed the threshold of significance. Mitigation Measure M-AQ-1.1 would reduce off-road and generator PM2.5 exhaust emissions by 73–91 percent, M-AQ-1.2 would reduce on-road PM2.5 exhaust emissions by 22–88 percent, M-AQ-1.4 would reduce barge PM2.5 exhaust emissions by 58 percent, and M-AQ-2.1 would reduce emergency generator PM2.5 exhaust emissions by 85 percent. For the onsite MIR, the maximum modeled mitigated annual average PM2.5 concentrations under proposed project conditions of 0.3 μg/m^3 combined with background annual average PM2.5 concentrations of 8.4 would equal 8.7, which is less than 10.0; therefore, under mitigated conditions, the onsite MIR would not be placed in a new APEZ, and the significance threshold for the project contribution of an annual average PM2.5 concentration of 0.3 μg/m^3 would not apply. Thus, with Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, and M-AQ-2.1, PM2.5 exhaust concentration impacts for receptors currently outside the APEZ under existing or future 2025 conditions but that would be located in the APEZ under existing/future plus proposed project conditions would be ***less than significant with mitigation***.

TABLE 4.G-18. MAXIMUM ANNUAL AVERAGE PM2.5 EXHAUST EXPOSURE WITHIN STUDY AREA AT ONSITE RECEPTORS NOT LOCATED IN THE APEZ DURING EXISTING OR FUTURE 2025 CONDITIONS BUT IN THE APEZ DURING EXISTING/FUTURE PLUS-PROJECT CONDITIONS

	Annual Average PM2.5 Concentration (μg/m³)[a]	
	Onsite Receptors	
Receptor	**Proposed Project**	**Mitigated[b]**
Construction		
2014 Analysis		
Total (Background + Project)	10.7	8.7
Background	8.4	8.4
Construction Contribution	**2.3**	0.3
Significance Threshold for Project Contribution	0.3	N/A[c]
Above Threshold?	**Yes**	N/A[c]
2025 Analysis		
Total (Background + Project)	10.7	8.7
Background	8.4	8.4
Construction Contribution	**2.3**	0.3
Significance Threshold for Project Contribution	0.3	N/A[c]
Above Threshold?	**Yes**	N/A[c]

Source:
CalEEMod modeling, AERMOD modeling, EMFAC2014 modeling, and other off-model calculations discussed in the AQTR and presented in Appendix B.

Notes:

a. Mitigated emissions assume that all off-road equipment and diesel generators have Tier 4 interim engines (Mitigation Measure M-AQ-1.1), all haul trucks are model year 2010 or newer (Mitigation Measure M-AQ-1.2), all construction barge engines have Tier 3 engines and all construction work boat engines are model year 2005 or newer (Mitigation Measure M-AQ-1.4), all operational emergency generators have model year 2008+ engines consistent with ARB ATCM emission rates that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1), and auto vehicle trips are reduced by 20 percent through the TDM plan (Mitigation Measure M-AQ-2.3).

b. The mitigated values may represent receptor locations that are different from those for the proposed project values. The highest mitigated values may occur at different locations because of the varying effectiveness of mitigation measures for each individual source of emissions. In addition, the values presented for 2025 may represent receptor locations that are different from those presented for 2014.

c. Because this receptor is not in an APEZ with the mitigated project contribution (i.e., the total background plus project annual average PM2.5 concentration is less than the APEZ threshold 10.0 μg/m³), the project-level contribution threshold (0.3 μg/m³) does not apply.

Emissions over threshold levels are in **bold.**

Abbreviations:
APEZ = Air Pollutant Exposure Zone.
μg/m³ = microgram per cubic meter.
PM2.5 = particulate matter less than or equal to 2.5 microns in diameter.

CANCER RISK

Proposed project construction and operation would generate DPM, resulting in the exposure of nearby existing sensitive receptors to increased PM2.5 concentrations and health risks associated with DPM. Similarly, new residents and children in potential day care centers who may occupy the project site prior to completion of the entire project may be exposed construction and operational DPM. As noted above, because the residential exposure assumptions are more conservative than those for other sensitive receptor types (such as hospitals, schools, and day care facilities), a conservative approach that considers all sensitive receptors to be residential receptors was used in this analysis.

OFFSITE AND ONSITE MIRS IN APEZ UNDER EXISTING CONDITIONS

For offsite MIRs in the study area that are currently located in the APEZ under existing or future 2025 conditions, the maximum modeled proposed project lifetime excess cancer risks under proposed project conditions for the offsite MIR is 24.4 per million (for combined construction plus operational emissions); 24.4 cancers per million exceeds the cumulative project contribution threshold of 7.0 per million for receptors within the APEZ. This is considered a significant impact. No onsite MIR is currently located in an APEZ; thus, none is shown in Table 4.G-19 on the following page.

MITIGATION MEASURES. As shown in Table 4.G-19, Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, and M-AQ-2.1 would reduce lifetime excess cancer risk for the offsite MIR to 4.0 per million, which is below the threshold of significance. Thus, with mitigation, cancer risk impacts for receptors located in the APEZ would be ***less than significant with mitigation***.

OFFSITE AND ONSITE MIRS NOT IN APEZ UNDER EXISTING CONDITIONS

For onsite MIRs in the study area that are not located in the APEZ under existing or future 2025 conditions but that would be located in the APEZ under existing or future 2025 plus proposed project conditions, the maximum modeled proposed project lifetime excess cancer risk under proposed project conditions during construction plus operation is 140.2 per 1 million. This exceeds the project contribution threshold 10.0 in 1 million. This is considered a significant impact. Therefore, mitigation would be required to reduce this impact.

For offsite MIRs that are not located in the APEZ under existing or future 2025 conditions but that would be located in the APEZ under existing or future 2025 plus proposed project conditions, the maximum modeled proposed project lifetime excess cancer risk under proposed project conditions during construction plus operation is 108.4 million. This value exceeds the project contribution threshold of 10.0 per 1 million for these receptors. This is considered a significant impact. Therefore, mitigation would be required to reduce this impact.

TABLE 4.G-19. MAXIMUM LIFETIME EXCESS CANCER RISK WITHIN STUDY AREA AT OFFSITE RECEPTORS IN THE APEZ DURING EXISTING OR FUTURE 2025 CONDITIONS

	Lifetime Excess Cancer Risk (per million)[a, b]	
	Offsite Receptors	
Receptor	**Proposed Project**	**Mitigated**
Construction Plus Operation		
2014 Analysis		
Total (Background + Project)	131.7	111.3
Background	107.2	107.2
Construction Plus Operation Contribution	**24.4**	4.0
Significance Threshold for Project Contribution	7.0	7.0
Above Threshold?	**Yes**	No
2025 Analysis		
Total (Background + Project)	180.1	164.8
Background	161.6	161.6
Construction Plus Operation Contribution	**18.5**	3.2
Significance Threshold for Project Contribution	7.0	7.0
Above Threshold?	**Yes**	No

Source:
CalEEMod modeling, AERMOD modeling, EMFAC2014 modeling, and other off-model calculations discussed in the AQTR and presented in Appendix B.

Notes:

a. Mitigated emissions assume that all off-road equipment and diesel generators have Tier 4 interim engines (Mitigation Measure M-AQ-1.1), all haul trucks are model year 2010 or newer (Mitigation Measure M-AQ-1.2), all construction barge engines have Tier 3 engines and all construction work boat engines are model year 2005 or newer (Mitigation Measure M-AQ-1.4), all operational emergency generators have model year 2008+ engines consistent with ARB ATCM emission rates that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1), and auto vehicle trips are reduced by 20 percent through the TDM plan (Mitigation Measure M-AQ-2.3).

b. The mitigated values may represent receptor locations that are different from those for the proposed project values. The highest mitigated values may occur at different locations because of the varying effectiveness of mitigation measures for each individual source of emissions. In addition, the values presented for 2025 may represent receptor locations that are different from those presented for 2014.

Emissions over threshold levels are in **bold.** Numbers may not sum perfectly because of rounding.

Abbreviation:
APEZ = Air Pollutant Exposure Zone.

MITIGATION MEASURES. As shown in Table 4.G-20 on the following page, Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, M-AQ-2.1, and M-AQ-2.3 reduce lifetime excess cancer risks under proposed project conditions for the onsite and offsite MIRs to 25.9 per million and 8.8 per million for construction plus operational emissions, respectively. Mitigation Measure M-AQ-1.1 would reduce off-road and generator PM10 exhaust emissions by 74–92 percent, M-AQ-1.2 would reduce on-road truck PM2.5 emissions by 22–88 percent, M-AQ-1.4 would reduce barge PM10 exhaust emissions by 58 percent, and M-AQ-2.1 would reduce emergency generator PM10 exhaust emissions by 85 percent. For the onsite MIR, the mitigated lifetime excess cancer risk under proposed project conditions of 25.8 combined with the background cancer risk of 53.0 would equal 78.7, which is less than 100; therefore, under mitigated conditions, the onsite MIR 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. For the offsite MIR, the mitigated lifetime excess cancer risks under background plus proposed project conditions would be 100.5. However, the proposed project's contribution of 8.8 would not exceed the project contribution threshold of 10.0 per million. Thus, with mitigation, cancer risk impacts for onsite and offsite receptors not located in the APEZ would be ***less than significant with mitigation***.

Impact AQ-5. The proposed project would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan. (Less than Significant with Mitigation)

The most recently adopted air quality plan for the SFBAAB is the 2010 Clean Air Plan. The 2010 Clean Air Plan is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the 2010 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. These questions are considered individually below.

(1) Would the project support the primary goals of the Clean Air Plan?

The primary goals of the Clean Air Plan are to (1) reduce emissions and decrease concentrations of harmful pollutants, (2) safeguard the public health by reducing exposure to air pollutants that pose the greatest health risk, and (3) reduce GHG emissions.

With respect attainment of air quality standards, several mitigation measures are identified above to reduce criteria air pollutants from both construction and operations. For construction, these include Mitigation Measure M-AQ-1.1 (Off-Road Construction Equipment Emissions Minimization), M-AQ-1.2 (On-Road Material Delivery and Haul Trucks Construction Emissions Minimization), M-AQ-1.4 (Best Available Control Technology for In-Water Construction

TABLE 4.G-20. MAXIMUM LIFETIME EXCESS CANCER RISK WITHIN STUDY AREA AT ONSITE AND OFFSITE RECEPTORS NOT LOCATED IN THE APEZ DURING EXISTING OR FUTURE 2020 CONDITIONS BUT IN THE APEZ DURING EXISTING OR FUTURE 2025 PLUS-PROJECT CONDITIONS

	Lifetime Excess Cancer Risk (per million)[a, b]			
	Onsite Receptors		Offsite Receptors	
Receptor	Proposed Project	Mitigated[c]	Proposed Project	Mitigated[c]
Construction Plus Operation				
2014 Analysis				
Total (Background + Project)	193.4	78.8	178.7	100.5
Background	53.0	53.0	70.3	91.7
Construction Plus Operation Contribution	**140.5**	25.9	**108.4**	8.8
Significance Threshold for Project Contribution	10.0	N/A[d]	10.0	10.0
Above Threshold?	**Yes**	N/A[d]	**Yes**	No
2025 Analysis				
Total (Background + Project)	178.3	63.7	156.0	103.2
Background	37.8	37.8	47.6	99.7
Construction Plus Operation Contribution	**140.5**	25.9	**108.4**	3.5
Significance Threshold for Project Contribution	10.0	N/A[d]	10.0	10.0
Above Threshold?	**Yes**	N/A[d]	**Yes**	No

Source:
CalEEMod modeling, AERMOD modeling, EMFAC2014 modeling, and other off-model calculations discussed in the AQTR and presented in Appendix B.
Notes:

a. Mitigated emissions assume that all off-road equipment and diesel generators have Tier 4 interim engines (Mitigation Measure M-AQ-1.1), all haul trucks are model year 2010 or newer (Mitigation Measure M-AQ-1.2), all construction barge engines have Tier 3 engines and all construction work boat engines are model year 2005 or newer (Mitigation Measure M-AQ-1.4), and all operational emergency generators have model year 2008+ engines consistent with ARB ATCM emission rates that also meet Tier 2 standards with Level 3 VDECS (Mitigation Measure M-AQ-2.1), and auto vehicle trips are reduced by 20 percent through the TDM plan (Mitigation Measure M-AQ-2.3).

b. "-" means that a receptor does not meet the criteria for the table. For example, there may not be an onsite receptor currently outside the APEZ during existing/future conditions but would be placed in the APEZ during existing/future plus-project conditions with only the operational contribution from the proposed project.

c. The mitigated values may represent receptor locations that are different from those for the proposed project values. The highest mitigated values may occur at different locations because of the varying effectiveness of mitigation measures for each individual source of emissions. In addition, the values presented for 2025 may represent receptor locations that are different from those presented for 2014.

d. Because this receptor is not placed in an APEZ with the mitigated project contribution (i.e., the total background plus project lifetime excess cancer risk is less than the APEZ threshold of 100.0 in 1 million), the project-level threshold (10.0 in 1 million) does not apply.

Emissions over threshold levels are in **bold.** Numbers may not sum perfectly because of rounding.
Abbreviation:
APEZ = Air Pollutant Exposure Zone.

Equipment) to reduce construction-related emissions of ozone precursors, including ROG and NOx, along with exhaust PM10 and PM2.5 emissions. Mitigation Measure M-AQ-1.3 (Low-VOC Architectural Coatings) would reduce ozone precursor emissions of ROG. For operations, Mitigation Measure M-AQ-2.1 (Best Available Control Technology for Operational Diesel Generators) would reduce ROG, NOx, PM10, and PM2.5 emissions from emergency generators. Mitigation Measures M-AQ-1.3 and M-AQ-2.2 (Reactive Organic Gases Emissions Reduction Measures) would reduce ozone precursor emissions of ROG, and Mitigation Measure M-AQ-2.3 (Transportation Demand Management) would promote additional transportation demand strategies beyond those included in the proposed project, such as the 20 percent reduction in trips. In addition, Mitigation Measure M-AQ-1.5 (Emissions Offsets for Construction and Operational Ozone Precursor Emissions) would offset both construction-related and operational ROG and NOx emissions to below significance thresholds through an offsite mitigation fee to fund offsite emissions reduction projects. Implementation of the emissions reduction projects could be conducted by the BAAQMD; this would be outside the jurisdiction and control of the City and would not be fully within the control of the project sponsor. M-AQ-1.5 also allows the project sponsor to directly fund or implement an offset project; however, no such project has yet been identified. Therefore, as discussed above, the residual impact of construction emissions of criteria air pollutants (Impact AQ-1), operational emissions of criteria air pollutants (Impact AQ-2), and construction plus operational emissions of criteria air pollutants (Impact AQ-3), under Impact AQ-1 is conservatively considered significant and unavoidable with mitigation. Additionally, as addressed in Impact AQ-4, Mitigation Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, M-AQ-2.1, and M-AQ-2.3 would reduce cancer risks and PM2.5 concentrations from both construction and operation to below significance thresholds, thereby reducing population exposure and protecting public health in the Bay Area.

The proposed project's impact with respect to GHGs is discussed in Section 4.H, *Greenhouse Gas Emissions*, which demonstrates that the proposed project would comply with the applicable provisions of the City's Greenhouse Gas Reduction Strategy. Thus, the project would not result in any significant impacts associated with an increase in GHGs or conflict with measures adopted for the purpose of reducing GHG emissions.

(2) Does the project include applicable control measures from the Clean Air Plan?

To meet the primary goals, the Clean Air Plan recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area-source measures, mobile-source measures, transportation control measures, land use measures, and energy and climate measures. The Clean Air Plan recognizes that, to a great extent, community design dictates individual travel mode and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and GHG from motor vehicles is to channel future Bay Area growth into vibrant urban communities where goods and services

are close at hand and people have a range of viable transportation options. To this end, the 2010 Clean Air Plan includes 55 control measures aimed at reducing air pollution in the SFBAAB.[68]

The measures most applicable to the proposed project are transportation control measures and energy and climate control measures. These measures include the following:

- TCM C-1 – Voluntary Employer-Based Trip Reduction Programs. "This measure will support voluntary efforts by Bay Area employers to encourage their employees to use alternative commute modes, such as transit, ridesharing, bicycling, walking, telecommuting, etc."
- TCM C-3 – Ridesharing Services and Incentives. "This measure will promote ridesharing services and incentives through the implementation of the 511 Regional Rideshare Program as well as local rideshare programs implemented by congestion management agencies. These activities will include marketing rideshare services, operating the rideshare information call center and website, and providing vanpool support services. In addition, this measure includes provisions for encouraging car-sharing programs where appropriate"
- TCM D-1 – Bicycle Access and Facilities Improvements. "TCM D-1 will 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. This TCM also includes improving bicycle access to transit and supporting the annual Bike to Work event."
- TCM D-2 – Pedestrian Access and Facilities Improvements. "TCM D-2 will improve pedestrian facilities and encourage walking by funding projects that improve pedestrian access to transit, employment, and major activity centers. Improvements may include sidewalks/paths, benches, reduced street widths, reduced intersection turning radii, crosswalks with activated signals, curb extensions/bulbs, buffers between sidewalks and traffic lanes, and street trees."
- TCM D-3 – Local Land Use Strategies. "TCM D-3 will support and promote land use patterns, policies, and infrastructure investments that support higher-density mixed-use, residential and employment development near transit in order to facilitate walking, bicycling, and transit use."

[68] Bay Area Air Quality Management District. 2010. *Bay Area 2010 Clean Air Plan*. Final Clean Air Plan – Volume II. Available: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Plans/2010%20Clean%20Air%20Plan/CAP%20Volume%20II_Sections%20A-F.ashx. Accessed: December 8, 2016.

- LUM 5 – Reduce and Track Health Risks in Affected Communities. "This measure describes a set of complementary actions and programs that comprise key elements of the BAAQMD's strategy to reduce emissions and population exposure in affected communities, as identified by the BAAQMD's Community Air Risk Evaluation (CARE) Program."
- LUM 6 – Enhanced Air Quality Monitoring. "The BAAQMD will evaluate and enhance its capabilities, as resources permit, to monitor air quality on a region-wide basis as well as on a localized basis in the affected communities identified under the BAAQMD's CARE Program."
- ECM 1 – Energy Efficiency. "This control measure consists of three components: 1) provide education and outreach to increase energy efficiency in residential and commercial buildings and industrial facilities, 2) provide technical assistance to local governments to adopt and enforce energy efficiency building codes, and 3) provide incentives for increasing energy efficiency at schools."
- ECM 2 – Renewable Energy. "This control measure consists of two components: 1) promote incorporation of renewable energy sources into new developments and redevelopment projects and 2) foster innovative renewable energy projects through the provision of incentives. Note: In addition, as part of the further-study measure entitled Enhancement to Energy Measures, the BAAQMD will evaluate the cost-effectiveness of solar thermal technology for consideration of a potential solar hot water heating rule."
- ECM 4 – Shade Tree Planting. "The control measure includes voluntary approaches to reducing the urban heat-island phenomenon, such as increasing shading in urban and suburban communities by planting of (low VOC-emitting) trees and preserving natural vegetation and ground cover."

The compact development of the proposed project and high availability of viable transportation options ensure that residents could bicycle, walk, or ride transit to and from the project site instead of taking trips by private automobile. These features ensure that the project would help to reduce the number of automobile trips and vehicle miles traveled compared to a greenfield or suburban development project. Furthermore, the proposed project would be consistent with the San Francisco General Plan, as discussed in Section 4.A. Transportation control measures that are identified in the 2010 Clean Air Plan are implemented through the San Francisco General Plan and the Planning Code (e.g., through the City's Transit First Policy, bicycle parking requirements, transit impact development fees). Additionally, as described in Mitigation Measure M-AQ-2.3 (Transportation Demand Management), the project would incorporate a TDM program. Compliance with these requirements would ensure that the project would include the relevant transportation control measures specified in the 2010 Clean Air Plan and support the Clean Air Plan's primary goals. Therefore, the proposed project would include the applicable control measures identified in the Clean Air Plan to the meet the plan's primary goals.

The proposed project also includes sustainability measures (through the Sustainability Plan) that would serve to implement control measures of the 2010 Clean Air Plan, including the land use and local impact measures, along with the energy and climate measures. The proposed project would also be subject to a number of sustainability requirements, including the California CALGreen Code and the Port of San Francisco Green Building Standards Code. In addition, the project would be designed to Leadership in Energy and Environmental Design (LEED®) Gold standards for commercial buildings and LEED Silver standards for residential buildings. LEED certification would be achieved by incorporating a variety of design features and implementing practices during construction and operation to provide energy and water conservation and efficiency, encourage alternative transportation, promote a healthy indoor environment, minimize waste, and maximize recycling opportunities.

(3) Does the project disrupt or hinder implementation of control measures identified in the Clean Air Plan?

Examples of projects that could disrupt or delay Clean Air Plan control measures are projects that would preclude the extension of a transit line or a bike path or projects that propose excessive parking beyond parking requirements. The proposed project would place a dense, walkable urban area near a concentration of regional and local transit service. It would not preclude the extension of a transit line or a bike path or any other transit improvement. As explained in Section 4.E, *Transportation and Circulation*, the proposed project would not provide excess parking capacity. Thus, the proposed project would not disrupt or hinder implementation of control measures identified in the Clean Air Plan.

Therefore, the proposed project would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan, particularly with implementation of Mitigation Measure M-AQ-1.1 (Off-Road Construction Equipment Emissions Minimization), M-AQ-1.2 (On-Road Material Delivery and Haul Trucks Construction Emissions Minimization), M-AQ-1.3 (Low-VOC Architectural Coatings), M-AQ-1.4 (Best Available Control Technology for In-Water Construction Equipment), M-AQ-2.1 (Best Available Control Technology for Operational Diesel Generators), M-AQ-2.2 (Reactive Organic Gases Emissions Reduction Measures), and M-AQ-2.3 (Transportation Demand Management). This impact would be ***less than significant with mitigation***.

SUMMARY OF IMPACT AQ-5

The project would be consistent with the 2010 Clean Air Plan, particularly with implementation of the mitigation measures listed above, in addition to project-specific measures to reduce pollutant emissions. Additionally, the project would be consistent with the 2010 Clean Air Plan by incorporating various Clean Air Plan control measures, such as land use and local impact measures, energy and climate measures, and TDM measures, all of which are incorporated in the proposed project. The proposed project would also not hinder implementation of the 2010

Clean Air Plan. Therefore, the proposed project would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan. This impact would be ***less than significant with mitigation***.

- Mitigation Measure M-AQ-1.1: Off-Road Construction Equipment Emissions Minimization (see Impact AQ-1, above)
- Mitigation Measure M-AQ-1.2: On-Road Material Delivery and Haul Truck Construction Emissions Minimization (see Impact AQ-1, above)
- Mitigation Measure M-AQ-1.3: Low-VOC Architectural Coatings (see Impact AQ-1, above)
- Mitigation Measure M-AQ-1.4: Best Available Control Technology for In-Water Construction Equipment (see Impact AQ-1, above)
- Mitigation Measure M-AQ-2.1: Best Available Control Technology for Operational Diesel Generators (see Impact AQ-2, above)
- Mitigation Measure M-AQ-2.2: Reactive Organic Gases Emissions Reduction Measures (see Impact AQ-2, above)
- Mitigation Measure M-AQ-2.3: Transportation Demand Management (see Impact AQ-2, above)

For the reasons described above, the proposed project would not interfere with implementation of the 2010 Clean Air Plan, and because the proposed project would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, this impact would be ***less than significant with mitigation***.

Impact AQ-6. The project would not result in significant exposure of sensitive receptors to asbestos during demolition activities. (Less than Significant)

Asbestos is a set of naturally occurring minerals that were previously used in building construction because of its heat resistance and strong insulating properties. Exposure to asbestos, however, has been shown to cause a number of disabling and fatal diseases, including lung cancer, mesothelioma, and pleural plaques. There is no demolition of existing buildings associated with the proposed project and no naturally occurring asbestos on the project site. The project would comply with BAAQMD Regulation 11, Rule 2, which would control emissions of asbestos to the atmosphere during any demolition activities. Accordingly, this impact is ***less than significant***. No mitigation is required.

Impact AQ-7. The proposed project would not create objectionable odors that would affect a substantial number of people. (Less than Significant)

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. During construction, diesel exhaust from construction equipment would generate some odors. However, construction-related odors would be temporary and would not persist upon project completion.

Potential odor sources during construction activities could include diesel exhaust from heavy-duty equipment and architectural coatings. Construction-related odors near existing receptors would be temporary and dissipate as a function of distance. The potential for diesel odor impacts is therefore considered less than significant. Odors from existing uses are not generally noticeable beyond the site boundary. Potential odor sources from project operations would include diesel exhaust from delivery and vendors' vehicles, the weekly trash pick-up, and the use of architectural coatings during routine maintenance. Limited odors may also result from residential and restaurant cooking appliances. These sources are not expected to produce any offensive odors that would result in frequent odor complaints. Existing odor sources in the surrounding area, which include commercial and residential uses, do not create significant odors. In the past 3 years, the BAAQMD received two odor complaints from the surrounding area. Both complaints pertained to odors from dust associated with street sweepers and Cirque du Soleil tent setup and/or teardown. No odor complaints were reported for either Pier 48 or nearby buildings, which include restaurants.[69] The project odors would be similar to the existing odor sources. Accordingly, the project operation would not create a significant source of new odors, and odor impacts would be ***less than significant***.

CUMULATIVE IMPACTS

The geographic scope of analysis for cumulative air quality construction impacts varies depending on the specific impact. For regional criteria air pollutants, the cumulative area includes the Bay Area. For toxic air contaminants it includes reasonably foreseeable projects within approximately 1,000 feet of the project site. Beyond 1,000 feet, the contributions of toxic air contaminants from this project to health risks outside 1,000 feet and the contributions from projects beyond 1,000 feet to health risks at and near this project would be greatly attenuated through both distance and intervening structures, and their contribution would be expected to be minimal. Cumulative odor impacts are assessed in the area immediately adjacent to the project site because the strength of odors dissipates rapidly with distance.

[69] Kirk, Alison. Senior Environmental Planner. Bay Area Air Quality Management District. December 13, 2015—email communication with ESA and ICF.

Impact C-AQ-1. The proposed project's construction and operation, in combination with other past, present, and reasonable future projects, would contribute to cumulative regional air quality impacts. (Significant and Unavoidable with Mitigation)

Regional air pollution is by its very nature largely a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be enough to result in regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts. 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 construction NO_x emissions (see discussion under Impact AQ-1), operational ROG emissions (see discussion under Impact AQ-2), and combined construction and operational NO_x and ROG emissions (see discussion under Impact AQ-3) would exceed the project-level thresholds for criteria air pollutants after mitigation, the proposed project would result in a cumulatively considerable contribution to regional air quality impacts.

Pursuant to Mitigation Measure M-AQ-1.5, the project sponsor would be required to fund an offsite mitigation project or pay offsite mitigation fees for ROG and NO_x emissions in excess of the BAAQMD thresholds. The fee would fund offsite emissions reduction projects in an amount that would be adequate with respect to mitigating residual combined ROG plus NO_x emissions from both construction and operation combined. Implementation of the emissions reduction project could be conducted by the BAAQMD; this would be outside the jurisdiction and control of the City and would not be fully within the control of the project sponsor. M-AQ-1.5 also allows the project sponsor to directly fund or implement an offset project; however, no such project has yet been identified. Therefore, the residual impact of construction emissions of criteria air pollutants is conservatively considered ***significant and unavoidable with mitigation***.

Impact C-AQ-2. The proposed project's construction and operation, in combination with other past, present, and reasonable future projects, could generate toxic air contaminants, including diesel particulate matter, but would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant with Mitigation).

As discussed in Impact AQ-4, the thresholds used to assess a project's impact on toxic air contaminants include consideration of the cumulative effects of existing and future reasonably foreseeable development. In addition, Impact AQ-4 includes an analysis of future conditions (2025) that includes all reasonably foreseeable development in the city (see Tables 4.G-18, 4.G-19, and 4.G-20 [pages 4.G-75, 4.G-77, and 4.G-79]). Thus, the project-level evaluation presented above contains a cumulative analysis. As described therein, with implementation of Mitigation

Measures M-AQ-1.1, M-AQ-1.2, M-AQ-1.4, and M-AQ-2.1, incremental project contributions to PM2.5 exposure and cancer risks would be less than the relevant thresholds and this cumulative impact would be ***less than significant with mitigation***.

Impact C-AQ-3. The proposed project's construction and operation, in combination with other past, present, and reasonable future projects, would not conflict with, or obstruct implementation of, the 2010 Clean Air Plan. (Less than Significant with Mitigation)

As discussed under Impact AQ-5, the proposed project would not interfere with implementation of the 2010 Clean Air Plan, and because the proposed project would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, the project will not contribute to a cumulative conflict with the 2010 Clean Air Plan. This impact would be ***less than significant with mitigation***.

Impact C-AQ-4. The proposed project's construction, in combination with other past, present, and reasonable future projects, would not expose sensitive receptors to asbestos during demolition activities. (Less than Significant)

As discussed under Impact AQ-6, there is no demolition of existing buildings associated with the proposed project and no naturally occurring asbestos on the project site. The project would comply with BAAQMD Regulation 11, Rule 2, which would control emissions of asbestos to the atmosphere during any demolition activities. BAAQMD rules also apply to other construction projects in the areas adjacent to the project site. Accordingly, the project would not contribute to a cumulative impact associated with asbestos and this impact would be ***less than significant***.

Impact C-AQ-5. The proposed project's construction, in combination with other past, present, and reasonable future projects, would not create objectionable odors that would affect a substantial number of people. (Less than Significant)

Construction-related odors near existing receptors would be temporary and dissipate as a function of distance. When compared to existing odor sources in the surrounding area, which include commercial and residential uses, odor impacts from project operation would be similar to existing conditions. Because the project would not create a significant source of new odors, it would not contribute considerably to any cumulative odor impacts and this impact would be ***less than significant***.